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A Few Words about Study on High Mountain Archaeology

- *Khadga Man Shrestha*

Archaeological excavations and explorations deal with scientific study of human activities on earth relating to different disciplines of learning. When we relate the study of human activities on earth our study is multi-dimensional in nature. It is more related with the evolutions on earth. Geography in general and Geology, Zoology and Botany in particular in this context could be related with archaeology. Scientific study on all these disciplines will reveal the indicators for drawing any inference. Both macro and micro level analysis are the techniques being adopted for the study. At the macro level the study will be related with the study of humanity at large. When we limit our study to any specific branch it will be related with micro level study. The study on High Mountain Archaeology covers different branches of learning. On the one hand, it is related with geomorphology, while, on the other, it is also related with human activities in the remote past.

Nepal-German Project on High Mountain Archaeology is aimed at the exploration of human activities from the pre-historic period. The scholars and scientists have been striving their best to make research in different aspects. The study reports mainly focus the outcome of the research. The process of study is being continued. Results of the laboratory tests are being published. Analytical studies of the artifacts and close observation of the sites, collection and study of resource materials are the processes being adopted. More thoughts are given on the subject matter. A seminar has been organised to invite the opinion of the scholars concerned. The present edition of *Ancient Nepal* deals with such studies.

The author would like to make a review of the articles included in this publication. Mr. Janak Lal Sharma, the ex-Director General of the Department of Archaeology has written a critical appreciation of a seminar on High Mountain Archaeology held in Nepal Administrative Staff College on the 9th March, 1993. He has also made review of the papers published in the journal of the Department of Archaeology, *Ancient Nepal* (No 130-133) June-January 1992-93.

Mr. Sharma has referred that the seminar on prehistoric archaeology was the first of its kind. All the papers presented by the German scholars were new except a few papers on anthropology. He states that the papers were based on developed scientific approach and analysis. These papers were the preliminary reports on archaeological explorations and excavations.

Mr. Sharma has mentioned that the field of archaeology has been divided into two parts i.e.

historical archaeology and prehistoric archaeology. To clarify further it has been divided into three parts: historic, protohistoric and prehistoric. According to Mr. Sharma, the history of Nepal upto the period of Lord Buddha is called historic period. It is based on the pillar inscriptions of Ashok. The periods prior to that are called protohistoric and prehistoric periods. The Nepal German Project on High Mountain Archaeology is mostly based on the prehistoric period and to some extent historic period. He refers that archaeology of Mustang is more related with geology, zoology and botany. The geological features of Mustang is very important for a geologist. It contains the stratigraphic and tectonic features of the eastern and the western Himalayas. He has given the reference of Tethys sediment of Thak Khola. By means of geological evidence man's antiquity is established. Geology remains are essential for relative dating and stratigraphical methods are used for establishing archaeological sequences. Mr. Sharma also mentions that prehistorians also use natural and physical sciences for information essential for drawing a complete picture of the man's past. He also makes mention of radiometric dating technique. It depends on the known rates of decay of a radioactive isotope or replacement of one isotope by another at a known rate. The first of these techniques to be applied to archaeology is generally referred to as carbon - 14. To elaborate the principle he says that all living organisms absorb radioactive carbon isotope from atmosphere. When an organism dies, the carbon isotope is no longer absorbed and what is already inside the organism begins to decay. As we know the rate of decay, the date of dead organism can be calculated on the basis of the amount of isotope remaining. The longer the time involved the less to measure, so that a point is reached where there is either too little to measure or nothing at all. Mr. Sharma also makes mention of enrichment technique being used recently to give reasonable result for the quantities originally too small to calculate. The author also gives an account of the basic principle of stratigraphy in archaeological investigation through excavation. The other techniques mentioned in the article is the detection of differing quantities of fossil pollen grains of various plants found in the soil. The author also makes mention of aerial photography for searching archaeological sites. Magnetic detectors are also used for this. The other interesting new technique referred is the analysis of deep seacores.

Mr. Sharma has also pointed out that evidences unearthed so far shows man's birth place in Asia. He cites the example of recent discovery of fossils of Ramapithecus at Butwal (December 1980). He says that *Ramapithecus* is the earliest fossil primate which many anthropologists believe to be a direct ancestor of man. He also makes mention of the explorations in the Mount Everest area carried out under the auspices of Chinese Academy of Sciences. He expresses his hope that the information obtained in the Himalayas and Tibetan Plateau will help in tracing the transition from ape to man and in seeking missing links to the evolution of man. He also suggests the other methods known as palaeomagnetic analysis in field of prehistory study. He attaches more importance on the study of German scientists in the Southern Mustang and shows urgent need of extending the study upto Northern Mustang. To conclude, he refers archaeological excavation as a means of rebuilding history. In this context the author says that the project of High Mountain Archaeology has been proved to be an important step for study in finding the prehistoric and historic period of the history of Nepal. His review gives an account of multi-dimensional aspects of archaeological exploration techniques. It testifies the rich experience of the author in the field of prehistoric studies.

"People's Participation in the Management of Local Affairs in Southern Mustang in the 19th and 20th Centuries" by Mr. M.L. Karmacharya gives the analysis of the old documents relating to the management of local affairs in the Thak Satsae and some other parts of Southern Mustang. Satsae is a region situated between Tukuche and Ghansa

in the Southern Mustang known as Thakali region. In 1926 the people of the region were given a regulation providing civil rights. When the regulation was promulgated local people were given judical power to settle minor local disputes. The Thak Satsae Dharma Panchayat Document was photographed by Prof. Dr. Schuh in 1990 in Ghansa. The document gives an account of the assembly of the Mukhiyas of 13 villages. The assembly was formed to manage the local affairs including social customs and settlement of local disputes. It aimed at the spread of education, prevention of epidemics and other diseases, promotion of trade and commerce, cottage industry and handicrafts and taking strict measures against evil traditions and undesirable activities in the community. It seems to be a copy of official document but it had not been endorsed with a seal or signature. The later portion of the document contained different decisions made on different dates from 1949 to 1959. The author draws inference that the 13 Mukhiyas representing 13 villages in the Thak Satsae region had formed themselves into a Dharma Panchayat under a constitution adopted by themselves and looked after the local affairs almost independently. The constitution had a provision of electing a working committee of 13 members known as Mukhiyas. The chairman was called Mir Mukhiya, the Vice chairman, Upa Mir Mukhiya and the treasurer, Tahabil Mukhiya. The meeting was held two times a year. The meetings were participated by the Kuriyas and bhaladamis, gentlemen from the localities.

The Panchayat tapped various sources as dues and revenues for its income. It levied birth as well as death tax. The Panchayat had taken measures like traditional banking system known as 'dhikar'. When one needs money for business the dhikar gives loan. It is just like a revolving fund.

The author also gives an account of Jhumsumba Document. The people of Jhumsumba (Jomsom) and Thini had concluded an agreement in 1938 to promote their local interest. Originally the people of the two villages had made an agreement on sharing of water for irrigation purposes. Later on, the document records a number of decisions regarding matters of social importance of the two villages. The document includes the decisions regarding restrictions to cut down trees without the permission of Talukdars and punishment for other offenses regarding grazing of cattle in the fields belonging to others.

The author also gives an account of Ghansa Village Document. The document is related with the protection of forest and forest products and the grazing as well as agriculture lands. It also contains the decisions made between 1868 to 1954. They are related with hunting, management of labour, trade and industry, observance of festivals, keeping buffaloes in the village and so on.

Thus the author gives an account of the local people's participation in local affairs with reference of the documents available in Southern Mustang.

Dr. Niels Gutschow's paper entitled "Kagbeni : Structural Analysis of Dendrochronological Data" gives an analytical account of dendrochronological study. It is an analytical account of the samples collected in Kagbeni which included the samples collected from Kagbeni castle with historic core and surrounding courtyard houses. Samples of pillars, joists and beams were carefully selected for dendrochronological study. He mentions that the samples collected in March 1993 were analysed by the tree ring laboratory of the University of Cologne.

Dendrochronology is a scientific method of dating by the analysis of tree rings. Samples are carefully studied to indicate the dates. The samples are taken from the area of investigation. Several such samples are studied. The tree rings show the features of climatic effect. Study of the samples are based on the survey of houses and other structures.

While analysing the samples the author mentions

that structural analysis alone reveals the stages of development. He cites the sample of House 1 of Pemba Drolkar which shows four stages of development, and draws the inference.

Dr. Niels also gives an account of other 28 samples from 16 houses and 21 dated samples from the castle. By systematic study of the samples he indicates the date of construction of the houses and castle.

To conclude his paper he says that it becomes evident that data provided by dendrochronological findings have to be co-related with evidence from structural analysis in order to come to a reliable conclusion about the history of a house or a development of a village. He gives illustrations to testify it.

Mr. Sukra Sagar Shrestha, Dr. Angela Simons and Dr. Werner Scön have jointly written the 'Preliminary Report on the 1992 Campaign of the Team of the Institute of Prehistory, University of Cologne." In this paper the writers have given the status of the cave system in the southern Mustang before the excavation and exploration were carried out by the Institute of Prehistory, University of Cologne. Numerous multistorey cave systems were dug by the men into the faces of the rock massifs situated alongside the riverbeds. In the Mukthinath Valley remains of ancient village sites with ruined houses and former field systems were located in the direct neighbourhood of such cave systems, Dr. Harka Gurung and Prof Dr. Dieter Schuh carried out the first survey in that area. Then a preliminary archaeological study was carried out in the upper Muktinath valley in 1990. This yielded a series of radio carbondates. The Cologne University made an archaeological research programme. Its aim was to carry out excavation works in selected cave systems and connected sites and collect the data to build up a chronology of the prehistoric and medieval settlement of the high mountain region of Nepal. The programme also aimed at making efforts to find out the connections between the cave settlements and cave burials of one of the known sites in Thak Khola in 1985. In 1992 the Cologne University team together with the counterpart from Department of Archeaology, HMG carried out field works. Field works were carried out at three sites, namely, Thak Khola near Dzar (Jharkot) and Dzong (Jhang) in upper Mukthinath and near Kag (Kagbeni) in lower Mukthinath Valley.

The paper gives an account of the funerary caves at the site of Chokhopani. It was completely buried by rock debris. For the installation of the waterpipe of the power station the rock debris were removed. While removing them at least three cave burials at different levels were opened. The pottery, bronze, shell pendants, beads were recovered. In October 1991 Dr. Dieter Schuh found the caves endangered by heavy water erosion. More than 100 ceramic vessels of different types and some metal ornaments were recovered. After Dr. Schuh's departure, some unauthorised persons climbed into the caves and destroyed the remaining structures. In 1992 the upper chamber was excavated. The house of several individuals and a number of potsherds and an iron nail were recovered. In the Chokopani funeral caves the dead were buried with their ornaments. Numerous ceramic vessels were probably filled with meals for the dead and put into the grave chamber. The metal objects from Chokhopani included anthropomorphe figures. The radiocarbon dates of Chokopani findings take us to 801 to 792 B.C.

The paper also gives an account of the cave system in Dzong (Jhong) opposite to the village site of Dzar (Jharkot). It contains six multi-storey cave system. An 8m long passage connects several cave rooms in the interior of the rock. The storing structures are mostly box-shaped. Some of the cave rooms are furnished with hearths & their ceilings are covered with soots. The walls of many caves are plastered with mud tampered with plant remains. The walls of some chambers show traces of elaborate paintings bearing witness to the last occupation of the caves by Buddhist hermits. The radio carbon dating of the findings shows the early

date as 810 to 799 B.C.

In the paper the authors have also have explained the cave systems and ruins in the lower Muktinath valley the site of Pludzeling. About one hours walk to the east of Kag (Kagbeni) lies the cave system and ruins of ancient settlement. It goes back into prehistoric times. Remains of 34 houses are preserved on the river terrace above the river Dzong. There are remains of ruined buildings which belong to 13th century. The radiocarbon analysis of a charcoal sample from this feature shows that the site was already inhabited in the Iron Age period i.e. 363 to 200 B.C. (three to 400 years later than the period represented in Chokhopani). However, a fragment of a basket dug in the easternmost peak of the rock massif yielded radio carbon date as early as 805-766 B.C. The team of the archacologists also discovered the ruins of a tower. The archaeologists say that they found charcoal animal bones, metal objects and ornaments of paper with Tibetan script drawing in the remains of cave chamber. These are all the remains of fire ceremony. They also found stone image of Boddhisatto placed at the former entrance of the ancient village.

The paper says that as a result of the field work of 1992 the following informations are available.

1. The cave systems were used mainly as settlements where everyday life took place. Radio carbon dates and the number of finds suggest their connection to the funeral caves in the Thak Khola.
2. The caves provided shelter during the attacks by enemies
3. They provided probably as the quarters of hermits who lived and worked there.

Moreover, the paper illucidates the information with the maps, caves shown in the maps, pottery recovered from different sites and other artifacts.

Mr. Chandra Prasad Tripathee in his paper entitled "Archaeological Excavation at Khingar and Dzarkot" has explained the objectives of the excavations at Khingar and Dzarkot that started from 1991. The main objectives of the excavation are : 1) to reveal the cultural sequences of Muktinath Valley, and 2) to corelate the sequences with the fortresses and cave settlement of that area, and 3) to acquire scientific archaeological datas regarding the settlement history of the high Himalayan belt. The writer elaborately mentions the procedure of excavations at both the places i.e. preliminary survey, hypothesis of the excavation, use of contour map, plan for laying out the trenches, achievements of the season's work, analysis of the findings and finally, the dating etc. While giving the account of the Khingar mound, the author says that the structural remains exposed showed three settlement phases in the mound. The remains showed that the settlers constructed the fort in the centre of the mound in the first phase. In the second phase they constructed small houses, and finally, in the third phase the settlement was extended to other possible areas and fortified them by erecting walls all around.

Mr. Tripathee indicates that the study of potsherds provides indicators to corelate the architectural phases of the mound. They also provide information for dating.

He also gives account of excavation carried out in Dzarkot just in front of the ruined castle. The castle was built without any foundation. The diagnostic value of the potsherds over there is very poor according to the author. To conclude, he says that these excavations provide information for setting models.

Christian G. Seeber in his paper, "Reflections on the Existence of Castles and Observation Towers in the Area under Investigation, the Southern Mustang (Thini, Jomsom, Dandkardzong, Jharkot)" gives his reflections after the study of the observation towers located at different sites in the Kali Gandaki Valley. By giving reference of the previous research the author says that the existence of these towers were used for many purposes. The

Kali Gandaki Valley as it lay on the trade route to Tibet from India, different political powers tried to control it. The towers were built to station the soldiers at the time of war. They were placed on strategically favourable elevations as to enable the view of surrounding roads. They were used for defensive purposes i.e., to protect the local dwellers from hostilities. They were also used for levying the duties and the taxes and to control access to valleys. Dendrochronology indicates that Garabdzong and Kagbeni were constructed in the 16th century in Jharkot, Dzong and Dankardzong in the early 17th century.

The author makes mention of the political powers that ruled in the modern Mustang. Their chronology is as follows:

Greater Tibet	-	7th to 9th Century
Gung Jhang	-	13th to 14th Century
Jumla	-	16th Century
Ladakh	-	17th Century
Jumla	-	18th Century
Gorkha	-	Late 18th Century (1789)

Source : Jackson (1978)

Dr. Ehrhard has also referred the existence of castle in the surrounding of Muktinath. Mr. Jackson quotes Gungthang Chronicle and describes "Mukhun" as one of the 13 'dynastic castles' built in the 13th century by Gungthang King (1253-1280).

Mr. Seeber also makes mention of the castle ruins which were found during the field work of 1993. The ruins of the castles are: 1) The Gazab Dzong fortress; 2) Castle like group of buildings above Kunglithing; 3) The Lubra observation tower; 4) The Dankardzong fortress; 5) A large fortress above Pikling; 6) The fortress of Kagbeni; 7) An observation tower on the cliff above derelict Phutseling; 8) The fortress of Kalon, east of Khyinga; 9) The fortress of Dzong; 10) The fortress of Jharkot; 11) An observation tower on the hilllock north of Jharkot (above the cave systems) and 12) An observation tower on the eastern flank of derelict Newa, West of Dzong.

The author mentions that the castle ruins of Garaledzong, Dankardzong and Piklin can be characterised as refuge castles.They were in all probalitity employed in the time of war by neighbouring villages as protection against encroachments. He also refers that the existence of a subterranean suplly of drinking water within the castle (Garaledzong, Jharkot). It proves that the castles were intended for long term use.

The author says that the existence of refuge castles allowed defence against aggressors. The existence of weapons-guns and swords etc. in Thini bear witness to this. Many towers like ruins with upto 3 storeys in the periphery of villages (Lubra and Phutselin) are all placed in strategically favourable elevations which enable a view of surrounding roads.

The author says that the ruins of Kagbeni show that they were used for levying of duties and taxes on commodites and transport animals. The internal structure of the fortress consists of several narrow rooms which indicate their usage as a palace. The author surmises that the bronze mirrors were used for long distance communication. Such mirrors were founed during an excavation by Hütlel in the abandoned settlement of Kalon (near Khyinga).

He mentions that the mirror is made of a bronze disc with two reflecting sides. The inner side of the mirror is concave while the outer is convex. The patina is light and bronze - coloured on both sides. This form is similar to the Central Tibetan bronze mirror originating in the Han dynasty (1st century B.C to 1st century A D). The author describes Dandardzong castle as long as 35 metes. Beneath the southern part of the village there is an artificial cave. The women and children get shelter there during the wars against Jumla Empire. The author also describes the features of the abandoned village situated on the road to Kagbeni about 2 Km from

Jomsom on the left bank of Kali Gandaki (Kunglithing) and the abandoned village of Garabdzong.

Mr Charles Ramble in his paper entitled ' Civic Authority and Agrarian Management in Southern Mustang' makes remark on a nineteenth century land tax register from Kagbeni. In his paper he explains the inter connections between agrarian practices, polity and local rituals. The author attaches archival value to the documents. These documents reveal the state of affairs of southern Mustang in the eighteenth and nineteenth centuries. He presents the paper in two parts. In the first part he summarises the contents of land-tax register of Kag (the KSM). The document provides fragmentary informations on catagories of land holding households and community held fields that are liable to special forms of taxation. In the second part he presents a broarder picture of the social organisation surrounding the payment of land taxes. The author says that Prof. D. Schuh photographed the text of documents in 1989. The tax consists of four main sections. Each section lists all the households in Kag, identifying them by the name of the principal householder. Each household is followed by a figure stating the seed capacity of the land attached to it. The paper explains the way in which tax liability is assessed on the basis of seed capacity. The author explains the theme with detail illustrations.

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'प्राचीन नेपाल'का निमित्त प्राग्-इतिहास तथा पुरातत्व, लिपिविज्ञान, हस्तलिखित ग्रन्थ, मुद्राशास्त्र, अभिलेख, संग्रहालय तथा ललितकलासंग सम्बन्धित मौलिक रचनाको माग गरिन्छ ।

रचना संक्षिप्त तर प्रामाणिक हुनुका साथै अद्यापि अप्रकाशित हुनुपर्दछ । तर कुनै प्रकाशित विषयका सम्बन्धमा नयां सिद्धान्त र प्रमाण प्रस्तुत गरिएको भए तिनको स्वागत गरिनेछ ।

रचनासंग सम्बन्धित चित्रहरु पठाउन सकिनेछ । रचना पृष्ठको अग्रभागमा मात्र लेखिएको हुनुपर्नेछ । प्रकाशित लेखहरुमा व्यक्त गरिएको भावना वा मत सम्बन्धित लेखकको हो ।

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रामशाहपथ
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Contribution of original nature dealing with pre-historic and field-archaeology, epigraph manuscripts, numismatics, archives, art and architecture of Nepal and museum and other techniques connected with various aspects of our work are invited to 'Ancient Nepal'.

The contribution should be concise and well documented, and based on hitherto unpublished data, if not new interpretation of already known evidence.

The opinions expressed are those of the authors and do not necessarily reflect the views of the editor or the Department of Archaeology.

Photographs and illustrations (line drawings) may be sent. The typescript should be in double space and on one side of the paper only and sent to:

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Kathmandu, Nepal.

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- *Khadga Man Shrestha*

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Mr. Sharma has mentioned that the field of archaeology has been divided into two parts i.e.

historical archaeology and prehistoric archaeology. To clarify further it has been divided into three parts: historic, protohistoric and prehistoric. According to Mr. Sharma, the history of Nepal upto the period of Lord Buddha is called historic period. It is based on the pillar inscriptions of Ashok. The periods prior to that are called protohistoric and prehistoric periods. The Nepal German Project on High Mountain Archaeology is mostly based on the prehistoric period and to some extent historic period. He refers that archaeology of Mustang is more related with geology, zoology and botany. The geological features of Mustang is very important for a geologist. It contains the stratigraphic and tectonic features of the eastern and the western Himalayas. He has given the reference of Tethys sediment of Thak Khola. By means of geological evidence man's antiquity is established. Geology remains are essential for relative dating and stratigraphical methods are used for establishing archaeological sequences. Mr. Sharma also mentions that prehistorians also use natural and physical sciences for information essential for drawing a complete picture of the man's past. He also makes mention of radiometric dating technique. It depends on the known rates of decay of a radioactive isotope or replacement of one isotope by another at a known rate. The first of these techniques to be applied to archaeology is generally referred to as carbon - 14. To elaborate the principle he says that all living organisms absorb radioactive carbon isotope from atmosphere. When an organism dies, the carbon isotope is no longer absorbed and what is already inside the organism begins to decay. As we know the rate of decay, the date of dead organism can be calculated on the basis of the amount of isotope remaining. The longer the time involved the less to measure, so that a point is reached where there is either too little to measure or nothing at all. Mr. Sharma also makes mention of enrichment technique being used recently to give reasonable result for the quantities originally too small to calculate. The author also gives an account of the basic principle of stratigraphy in archaeological investigation through excavation. The other techniques mentioned in the article is the detection of differing quantities of fossil pollen grains of various plants found in the soil. The author also makes mention of aerial photography for searching archaeological sites. Magnetic detectors are also used for this. The other interesting new technique referred is the analysis of deep seacores.

Mr. Sharma has also pointed out that evidences unearthed so far shows man's birth place in Asia. He cites the example of recent discovery of fossils of Ramapithecus at Butwal (December 1980). He says that *Ramapithecus* is the earliest fossil primate which many anthropologists believe to be a direct ancestor of man. He also makes mention of the explorations in the Mount Everest area carried out under the auspices of Chinese Academy of Sciences. He expresses his hope that the information obtained in the Himalayas and Tibetan Plateau will help in tracing the transition from ape to man and in seeking missing links to the evolution of man. He also suggests the other methods known as palaeomagnetic analysis in field of prehistory study. He attaches more importance on the study of German scientists in the Southern Mustang and shows urgent need of extending the study upto Northern Mustang. To conclude, he refers archaeological excavation as a means of rebuilding history. In this context the author says that the project of High Mountain Archaeology has been proved to be an important step for study in finding the prehistoric and historic period of the history of Nepal. His review gives an account of multi-dimensional aspects of archaeological exploration techniques. It testifies the rich experience of the author in the field of prehistoric studies.

"People's Participation in the Management of Local Affairs in Southern Mustang in the 19th and 20th Centuries" by Mr. M.L. Karmacharya gives the analysis of the old documents relating to the management of local affairs in the Thak Satsae and some other parts of Southern Mustang. Satsae is a region situated between Tukuche and Ghansa

in the Southern Mustang known as Thakali region. In 1926 the people of the region were given a regulation providing civil rights. When the regulation was promulgated local people were given judical power to settle minor local disputes. The Thak Satsae Dharma Panchayat Document was photographed by Prof. Dr. Schuh in 1990 in Ghansa. The document gives an account of the assembly of the Mukhiyas of 13 villages. The assembly was formed to manage the local affairs including social customs and settlement of local disputes. It aimed at the spread of education, prevention of epidemics and other diseases, promotion of trade and commerce, cottage industry and handicrafts and taking strict measures against evil traditions and undesirable activities in the community. It seems to be a copy of official document but it had not been endorsed with a seal or signature. The later portion of the document contained different decisions made on different dates from 1949 to 1959. The author draws inference that the 13 Mukhiyas representing 13 villages in the Thak Satsae region had formed themselves into a Dharma Panchayat under a constitution adopted by themselves and looked after the local affairs almost independently. The constitution had a provision of electing a working committee of 13 members known as Mukhiyas. The chairman was called Mir Mukhiya, the Vice chairman, Upa Mir Mukhiya and the treasurer, Tahabil Mukhiya. The meeting was held two times a year. The meetings were participated by the Kuriyas and bhaladamis, gentlemen from the localities.

The Panchayat tapped various sources as dues and revenues for its income. It levied birth as well as death tax. The Panchayat had taken measures like traditional banking system known as 'dhikar'. When one needs money for business the dhikar gives loan. It is just like a revolving fund.

The author also gives an account of Jhumsumba Document. The people of Jhumsumba (Jomsom) and Thini had concluded an agreement in 1938 to promote their local interest. Originally the people of the two villages had made an agreement on sharing of water for irrigation purposes. Later on, the document records a number of decisions regarding matters of social importance of the two villages. The document includes the decisions regarding restrictions to cut down trees without the permission of Talukdars and punishment for other offenses regarding grazing of cattle in the fields belonging to others.

The author also gives an account of Ghansa Village Document. The document is related with the protection of forest and forest products and the grazing as well as agriculture lands. It also contains the decisions made between 1868 to 1954. They are related with hunting, management of labour, trade and industry, observance of festivals, keeping buffaloes in the village and so on.

Thus the author gives an account of the local people's participation in local affairs with reference of the documents available in Southern Mustang.

Dr. Niels Gutschow's paper entitled "Kagbeni : Structural Analysis of Dendrochronological Data" gives an analytical account of dendrochronological study. It is an analytical account of the samples collected in Kagbeni which included the samples collected from Kagbeni castle with historic core and surrounding courtyard houses. Samples of pillars, joists and beams were carefully selected for dendrochronological study. He mentions that the samples collected in March 1993 were analysed by the tree ring laboratory of the University of Cologne.

Dendrochronology is a scientific method of dating by the analysis of tree rings. Samples are carefully studied to indicate the dates. The samples are taken from the area of investigation. Several such samples are studied. The tree rings show the features of climatic effect. Study of the samples are based on the survey of houses and other structures.

While analysing the samples the author mentions

that structural analysis alone reveals the stages of development. He cites the sample of House 1 of Pemba Drolkar which shows four stages of development, and draws the inference.

Dr. Niels also gives an account of other 28 samples from 16 houses and 21 dated samples from the castle. By systematic study of the samples he indicates the date of construction of the houses and castle.

To conclude his paper he says that it becomes evident that data provided by dendrochronological findings have to be co-related with evidence from structural analysis in order to come to a reliable conclusion about the history of a house or a development of a village. He gives illustrations to testify it.

Mr. Sukra Sagar Shrestha, Dr. Angela Simons and Dr. Werner Scön have jointly written the 'Preliminary Report on the 1992 Campaign of the Team of the Institute of Prehistory, University of Cologne." In this paper the writers have given the status of the cave system in the southern Mustang before the excavation and exploration were carried out by the Institute of Prehistory, University of Cologne. Numerous multistorey cave systems were dug by the men into the faces of the rock massifs situated alongside the riverbeds. In the Mukthinath Valley remains of ancient village sites with ruined houses and former field systems were located in the direct neighbourhood of such cave systems, Dr. Harka Gurung and Prof Dr. Dieter Schuh carried out the first survey in that area. Then a preliminary archaeological study was carried out in the upper Muktinath valley in 1990. This yielded a series of radio carbondates. The Cologne University made an archaeological research programme. Its aim was to carry out excavation works in selected cave systems and connected sites and collect the data to build up a chronology of the prehistoric and medieval settlement of the high mountain region of Nepal. The programme also aimed at making efforts to find out the connections between the cave settlements and cave burials of one of the known sites in Thak Khola in 1985. In 1992 the Cologne University team together with the counterpart from Department of Archeaology, HMG carried out field works. Field works were carried out at three sites, namely, Thak Khola near Dzar (Jharkot) and Dzong (Jhang) in upper Mukthinath and near Kag (Kagbeni) in lower Mukthinath Valley.

The paper gives an account of the funerary caves at the site of Chokhopani. It was completely buried by rock debris. For the installation of the waterpipe of the power station the rock debris were removed. While removing them at least three cave burials at different levels were opened. The pottery, bronze, shell pendants, beads were recovered. In October 1991 Dr. Dieter Schuh found the caves endangered by heavy water erosion. More than 100 ceramic vessels of different types and some metal ornaments were recovered. After Dr. Schuh's departure, some unauthorised persons climbed into the caves and destroyed the remaining structures. In 1992 the upper chamber was excavated. The house of several individuals and a number of potsherds and an iron nail were recovered. In the Chokopani funeral caves the dead were buried with their ornaments. Numerous ceramic vessels were probably filled with meals for the dead and put into the grave chamber. The metal objects from Chokhopani included anthropomorphe figures. The radiocarbon dates of Chokopani findings take us to 801 to 792 B.C.

The paper also gives an account of the cave system in Dzong (Jhong) opposite to the village site of Dzar (Jharkot). It contains six multi-storey cave system. An 8m long passage connects several cave rooms in the interior of the rock. The storing structures are mostly box-shaped. Some of the cave rooms are furnished with hearths & their ceilings are covered with soots. The walls of many caves are plastered with mud tampered with plant remains. The walls of some chambers show traces of elaborate paintings bearing witness to the last occupation of the caves by Buddhist hermits. The radio carbon dating of the findings shows the early

date as 810 to 799 B.C.

In the paper the authors have also have explained the cave systems and ruins in the lower Muktinath valley the site of Pludzeling. About one hours walk to the east of Kag (Kagbeni) lies the cave system and ruins of ancient settlement. It goes back into prehistoric times. Remains of 34 houses are preserved on the river terrace above the river Dzong. There are remains of ruined buildings which belong to 13th century. The radiocarbon analysis of a charcoal sample from this feature shows that the site was already inhabited in the Iron Age period i.e. 363 to 200 B.C. (three to 400 years later than the period represented in Chokhopani). However, a fragment of a basket dug in the easternmost peak of the rock massif yielded radio carbon date as early as 805-766 B.C. The team of the archacologists also discovered the ruins of a tower. The archaeologists say that they found charcoal animal bones, metal objects and ornaments of paper with Tibetan script drawing in the remains of cave chamber. These are all the remains of fire ceremony. They also found stone image of Boddhisatto placed at the former entrance of the ancient village.

The paper says that as a result of the field work of 1992 the following informations are available.

1. The cave systems were used mainly as settlements where everyday life took place. Radio carbon dates and the number of finds suggest their connection to the funeral caves in the Thak Khola.
2. The caves provided shelter during the attacks by enemies
3. They provided probably as the quarters of hermits who lived and worked there.

Moreover, the paper illucidates the information with the maps, caves shown in the maps, pottery recovered from different sites and other artifacts.

Mr. Chandra Prasad Tripathee in his paper entitled "Archaeological Excavation at Khingar and Dzarkot" has explained the objectives of the excavations at Khingar and Dzarkot that started from 1991. The main objectives of the excavation are : 1) to reveal the cultural sequences of Muktinath Valley, and 2) to corelate the sequences with the fortresses and cave settlement of that area, and 3) to acquire scientific archaeological datas regarding the settlement history of the high Himalayan belt. The writer elaborately mentions the procedure of excavations at both the places i.e. preliminary survey, hypothesis of the excavation, use of contour map, plan for laying out the trenches, achievements of the season's work, analysis of the findings and finally, the dating etc. While giving the account of the Khingar mound, the author says that the structural remains exposed showed three settlement phases in the mound. The remains showed that the settlers constructed the fort in the centre of the mound in the first phase. In the second phase they constructed small houses, and finally, in the third phase the settlement was extended to other possible areas and fortified them by erecting walls all around.

Mr. Tripathee indicates that the study of potsherds provides indicators to corelate the architectural phases of the mound. They also provide information for dating.

He also gives account of excavation carried out in Dzarkot just in front of the ruined castle. The castle was built without any foundation. The diagnostic value of the potsherds over there is very poor according to the author. To conclude, he says that these excavations provide information for setting models.

Christian G. Seeber in his paper, "Reflections on the Existence of Castles and Observation Towers in the Area under Investigation, the Southern Mustang (Thini, Jomsom, Dandkardzong, Jharkot)" gives his reflections after the study of the observation towers located at different sites in the Kali Gandaki Valley. By giving reference of the previous research the author says that the existence of these towers were used for many purposes. The

Kali Gandaki Valley as it lay on the trade route to Tibet from India, different political powers tried to control it. The towers were built to station the soldiers at the time of war. They were placed on strategically favourable elevations as to enable the view of surrounding roads. They were used for defensive purposes i.e., to protect the local dwellers from hostilities. They were also used for levying the duties and the taxes and to control access to valleys. Dendrochronology indicates that Garabdzong and Kagbeni were constructed in the 16th century in Jharkot, Dzong and Dankardzong in the early 17th century.

The author makes mention of the political powers that ruled in the modern Mustang. Their chronology is as follows:

Greater Tibet	-	7th to 9th Century
Gung Jhang	-	13th to 14th Century
Jumla	-	16th Century
Ladakh	-	17th Century
Jumla	-	18th Century
Gorkha	-	Late 18th Century (1789)

Source : Jackson (1978)

Dr. Ehrhard has also referred the existence of castle in the surrounding of Muktinath. Mr. Jackson quotes Gungthang Chronicle and describes "Mukhun" as one of the 13 'dynastic castles' built in the 13th century by Gungthang King (1253-1280).

Mr. Seeber also makes mention of the castle ruins which were found during the field work of 1993. The ruins of the castles are: 1) The Gazab Dzong fortress; 2) Castle like group of buildings above Kunglithing; 3) The Lubra observation tower; 4) The Dankardzong fortress; 5) A large fortress above Pikling; 6) The fortress of Kagbeni; 7) An observation tower on the cliff above derelict Phutseling; 8) The fortress of Kalon, east of Khyinga; 9) The fortress of Dzong; 10) The fortress of Jharkot; 11) An observation tower on the hilllock north of Jharkot (above the cave systems) and 12) An observation tower on the eastern flank of derelict Newa, West of Dzong.

The author mentions that the castle ruins of Garaledzong, Dankardzong and Piklin can be characterised as refuge castles.They were in all probalitity employed in the time of war by neighbouring villages as protection against encroachments. He also refers that the existence of a subterranean suplly of drinking water within the castle (Garaledzong, Jharkot). It proves that the castles were intended for long term use.

The author says that the existence of refuge castles allowed defence against aggressors. The existence of weapons-guns and swords etc. in Thini bear witness to this. Many towers like ruins with upto 3 storeys in the periphery of villages (Lubra and Phutselin) are all placed in strategically favourable elevations which enable a view of surrounding roads.

The author says that the ruins of Kagbeni show that they were used for levying of duties and taxes on commodites and transport animals. The internal structure of the fortress consists of several narrow rooms which indicate their usage as a palace. The author surmises that the bronze mirrors were used for long distance communication. Such mirrors were founed during an excavation by Hütlel in the abandoned settlement of Kalon (near Khyinga).

He mentions that the mirror is made of a bronze disc with two reflecting sides. The inner side of the mirror is concave while the outer is convex. The patina is light and bronze - coloured on both sides. This form is similar to the Central Tibetan bronze mirror originating in the Han dynasty (1st century B.C to 1st century A D). The author describes Dandardzong castle as long as 35 metes. Beneath the southern part of the village there is an artificial cave. The women and children get shelter there during the wars against Jumla Empire. The author also describes the features of the abandoned village situated on the road to Kagbeni about 2 Km from

Jomsom on the left bank of Kali Gandaki (Kunglithing) and the abandoned village of Garabdzong.

Mr Charles Ramble in his paper entitled ' Civic Authority and Agrarian Management in Southern Mustang' makes remark on a nineteenth century land tax register from Kagbeni. In his paper he explains the inter connections between agrarian practices, polity and local rituals. The author attaches archival value to the documents. These documents reveal the state of affairs of southern Mustang in the eighteenth and nineteenth centuries. He presents the paper in two parts. In the first part he summarises the contents of land-tax register of Kag (the KSM). The document provides fragmentary informations on catagories of land holding households and community held fields that are liable to special forms of taxation. In the second part he presents a broarder picture of the social organisation surrounding the payment of land taxes. The author says that Prof. D. Schuh photographed the text of documents in 1989. The tax consists of four main sections. Each section lists all the households in Kag, identifying them by the name of the principal householder. Each household is followed by a figure stating the seed capacity of the land attached to it. The paper explains the way in which tax liability is assessed on the basis of seed capacity. The author explains the theme with detail illustrations.

A Brief Note on the Seminar on High Mountain Archaeology of Nepal

(held at Kathmandu on March 9, 1993)

- Janak Lal Sharma

A seminar on 'High Mountain Archaeology of Nepal' was organised in Kathmandu jointly by HMG/N Department of Archaeology, and Nepal-German Project on High Mountain Archaeology on March 9, 1993. Papers were presented by the German as well as the Nepalese scholars. Only some papers are published in the Journal of the Department of Archaeology, *Ancient Nepal* (No. 130-133, June-January 1992-93) and the issue was distributed in the seminar.

The papers presented in the seminar by the Nepalese scholars are not published in the journal except the foreword entitled *A Few Words* by Mr. Khadga Man Shrestha, Director General of the Department of Archaeology. Nepalese Scholar Mr. Chandra Prasad Tripathi presented his paper on "Archaeological Excavation in Khingar and Dzarkot," which is also not included in the published journal. But we can hope that all the papers will be published in the future.

Many seminars on Nepalese cultural heritage have been organised previously, but it was the first time that the seminar on prehistoric archaeology of Nepal was conducted. No such seminar was held in the past. Therefore, it was very remarkable and important. The papers presented by the German scholars were new in this field except for a few papers on anthropology.

The materials given in the papers were not surfacial but were based on developed scientific approach and analysis. The papers as such were significant not only to Nepal but also to the world. This point was also noted by Prof. Dr. Dieter Schuh in his introduction. Presented seminar papers were only preliminary reports on archaeological explorations and excavations that were done in Nepal to date. We can hope that valuable informations will be available in future with the final reports.

The field of archaeology is classified into two parts: historical archaeology and pre-historic archaeology, but to classify it more clearly, we can divide it into three parts: historic, proto-historic and pre-historic. As for example, the history of Nepal goes back to the period of Lord Buddha on the basis of inscriptions on Ashokan pillar found at Lumbini and Kapilavastu (Niglihawa). The period upto Lord Buddha is called historic period whereas the periods previous to that should be called proto-historic and pre-historic periods. The Nepal-German Project on High Mountain Archaeology is concerned more on the pre-historic period and to

some extent historic too.

Prof. Dr. Dieter Schuh in his introduction had remarked that Mustang civilisation may be more than 6,000 years old, and the exploration will greatly enhance the prestige of Nepal as a cultural nation which created one of the oldest highly developed civilisations in the world. The writer has not written these words just to please the Nepalese people. Whatever he has written is based on scientific exploration.

The oldest pre-historic human settlement in the world is Jericho in the Jordan Valley. Although Dr. Schuh had not mentioned Jericho, I have the opinion that he had tried to compare the culture of Mustang with that of Jericho.

Let us see why Dr. Schuh has given so much importance to Mustang. Toni Hagen in his famous book entitled Nepal has included a Photograph No. 38 under the caption reading as "*Deserted Cave Dwellings in the Extreme North of Nepal*", with also a short note as: 'innumerable such deserted caves are found in Thak Khola, to the north of Annapurna and Dhaulagiri. Mostly they were formerly monasteries, some of which especially easy of access, are today the abode of Buddhist Lamas. Possibly these caves also served the local population as protection from the marauding attacks of robbers from the north". This note will give only a general idea about the matter in question.

The geological structure of Mustang area is very important for a geologist. Dr. Chandra Kanta Sharma, a well known geologist of Nepal, has studied this area to a considerable extent. According to him the geological features of this area are as follows:

"Tectonics : Fractures in the Tibetan slab having N 35º E are related to a fracturation schistosity and are posterior to the main tectonic phase and responsible for the formation of the late structures like Thak Khola trench".

About the top of the Tibetan slab he writes, "The tectonic discontinuities just above the augengneiss and Tibetan slab became recumbent fold (Manang synclinorium, Gangapurna, Nilgiri and Dhaulagiri) affecting whole of sedimentary sequences from ordovician upwards". On the other hand, he writes, "Western Nepal encompasses the area between the Karnali and the Gandak River. This area is highly interesting for geologists as it contains the stratigraphic and the tectonic features of both the eastern and the western Himalayas. Gondwana formation which is found to occur sandwiched between underlying the Main Boundary Thrust and overlying metamorphics is also found in the Tansen area and the Western Himalayan features of Eocene horizon also overlaps in this zone. In the northern area particularly in Thak Khola one can study the Tethys sediment in the Thak Khola graben. The sheet of Himal gneiss continues parallel to Himalaya in NW-SE trend from the eastern to western Nepal". (C. K. Sharma, *Geology of Nepal Himalaya and Adjacent Countries*, pp. 231, 237, 1990 A.D.).

Dr. Sharma has raised the question of Tethys sediment of Thak Khola. The study of Tethys sediment is new to us. It will be interesting to have some idea about Tethys.

"Tethys sea which lay between Laurasia and Gondwanaland, two super continents which were formed by the first split of the ancient super continent PANGAEA. It was the site of a large Mesozoic Geo-syncline which was later elevated into the Alps and the Himalayas".

The field of archaeology is related to geology, zoology and botany also. As it was largely by means of geological evidence that man's antiquity was established, it is not surprising that geology remains essential to relative dating, and stratigraphical methods for establishing

archaeological sequences are derived from geological practice. In addition to geology, prehistorians have drawn the natural and physical sciences for information essential to sketch a complete picture of man's past.

It is obvious that the enormous range of geological time must be subdivided. The initial four major divisions, viz., Primary, Secondary, Tertiary and Quaternary, are further subdivided, each subdivision being characterized by special fauna or special formations.

If we accept that the principle of evolution applies to man as well as to other creatures, it is possible, at least in theory, to trace all living things back to simple, unicellular organisms, almost at the beginning of geological time. As we are dealing with man's immediate ancestry, we need only concern ourselves with the last two major geological divisions, the Tertiary and the Quaternary or Pleistocene. During the former period of geological time, man's physical development began to take definite shape, while during the latter, his cultural development took place.

The exact duration of the Pleistocene is still not known for certain; it ended sometime around 10,000 years ago. For a long time geologists estimated its duration as being about 600,000 years, but recent evidence suggests something nearer 2.5 million.

About high altitude cave-settlements in Nepal Prof. Dr. Dieter Schuh writes in his introduction : "A part of the population of Purang lives also in cave dug into the conglomerate walls of hills which are made into regular houses by the construction of walls and gates in the front side. Some caves are even two or three-storeyed high."

"If we remain in an area of the same altitude as Purang but turn to the west for about 300 km into the territory of Nepal, we reach the area of the Kali Gandaki river in the Mustang district in Nepal. Here in a similar environment we again find huge systems of cave settlements. These settlements were observed and briefly described by G. Tucci and other scholars."

After G. Tucci, Mr. Toni Hagen (1961) and other scholars have also described the cave system in Mustang area. Mr. H. Danial Gebauer has given some note in his book named *Caves of India and Nepal* (1981/82, pp. 76).

One of the highly appreciable articles published in *Ancient Nepal*, (No. 130-133 June-January 1992-93), is "Trial Excavations of a Cave System in Muktinath Valley" by M. Angela Simons. This article is very important to Nepalese archaeological history. She has given sufficient carbon-14 data. Carbon dating is the little known method in the field of Nepalese Archaeology.

The major advance in the search for absolute chronology came from the field of atomic physics and was pioneered in America. The various techniques generally known as radiometric dating depend on the known rates of decay of a radioactive isotope, or the replacement of one isotope by another, also at a known rate. The first of these techniques to be applied to archaeology is generally referred to as carbon-14. In principle all living organisms absorb the radioactive carbon isotope from the atmosphere. When an organism dies, the carbon isotope is no longer absorbed, and what is already inside the organism begins to decay. As we know the rate of decay, the date of death of the organism can be calculated on the basis of the amount of isotope remaining. Obviously, the longer the time involved the less to measure, so that a point is reached where there is either too little to measure or nothing at all.

Recently, enrichment techniques have been developed which give reasonable result for quantities orginally too small to calculate, thus extending the time scale. So far, dates of about

4000 - 50,000 years are possible. There is however, a margin of error which increases as the date gets older. A variable factor of about 200 years is not very serious in a date of about 20,000 years, but would make a medieval date pretty useless.

Only a limited number of materials from archaeological sites are suitable for carbon-14 dating - charcoal from hearth, bone, antler and shell, the last being the least suitable as a considerable quantity of material is required to give an acceptable result.

M. Angela Simon's article is very useful to carbon-14 dating data of Mustang area.

The next article published in the same journal is "Dendrochronological Research in South Mustang." This article is also very useful to Nepalese Archaeology. Dendrochronological research is done for the first time in Nepal, particularly in the field of archaeology. Dr. Schmidt has given a number of data about dendrochronology of Mustang area, Europe and America also.

Dendrochronology is a method of dating past events by the analysis of tree rings. The system is based on the fact that as the climate varies, so does the thickness of the rings which a tree produces each year. By matching variation in the rings with samples taken from fossilised tree remains found on archaeological sites in the areas subjected to the same climatic conditions, the data of the remains can be established.

Dendrochronology was first developed in the USA in 1929. More recently, using the tree rings from the Californian bristle-cone pine - the world's oldest living tree - a long series of the tree-ring dates stretching back about 6,500 years has been prepared. This development has had important consequences. It has shown that at this early period much more carbon-14 occurred naturally, and so suggests that dates established by RADIO-CARBON DATING are generally too late.

In the field of prehistoric archaeology pollen analysis is also very important. Pollen grains have extremely tough, often intricately patterned outer walls, and these walls may remain intact for thousands of years. Most plant genera, and some species, have their own distinctive pattern, which may be used for purposes of identification. These characteristics make pollen analysis a particularly useful tool in reconstructing the flora of prehistoric time, when most other aspects of the vegetation have decomposed.

Similarly, in the same journal we find other articles like "Important Trade Routes in Nepal and their Importance to the Settlement Process" by Dr. Rainer Grafen and Christian Seeber and "A Ritual of Political Unity in an Old Nepalese Kingdom" by Dr. Niels Gutschow. These articles are very important in the field of Nepalese archaeology as Director General Mr. Khadga Man Shrestha suggests in his *"A Few Words"*.

Prof. Dr. Dieter Schuh has made a note in his introduction that "The actual field work will be done and supervised by the two young Nepalese archaeologists and two young German archaeologists. The persons concerned still have to be selected. As far as the young scholars from Nepal are concerned, it is planned to provide an extra training for half a year in archaeological fieldwork in Germany .... Moreover, it may turn out to be useful to use the help of trained students in the field of archaeology, from Nepal and Germany for limited periods."

It will definitely benefit Nepal in the field of archaeology. But on the other hand he writes, "From 1992 to 1993, the Nepalese group of archaeologists should undertake a separate excavation-project in the northern part of the Mustang district, which is a restricted area and not accessible for their German colleagues. During

this time the German participants should concentrate on excavation in the area of Tukche."

Archaeologists concern themselves with the reconstruction of man's past through the study of his material remains. Through their work we can learn something about the societies which have no written records; and even historical sources do not always tell people what they want to know, particularly about everyday life and customs.

Archaeology's main method of investigation is excavation, which depends on the basic principle of stratigraphy - that the remains of earlier generations are covered over by those of their successors. But we have no record in the field of prehistoric archaeology in Nepal. Science, too, plays its part. Among modern scientific methods radiocarbon dating has been the most revolutionary. It is based on the principle of the radioactive isotope carbon-14 we have already discussed.

Other techniques cover man's relationship to his environment. The clearing of forests by neolithic farmers, for example, has been detected from the differing quantities of fossil pollen grains of various plants found in the soil.

Much can also be done without actual excavation. Aerial photography, for instance, has been of great importance for the quest of many archaeological sites, often giving archaeologists valuable clues to the past buried beneath.

There are reasons why the German scientists selected the Mustang area particularly. In the Mustang area there are great many human dwelling caves from the prehistoric to the historic time. Mustang is not so far from the Sagarmatha (Mount Everest) area. Upper Mustang is on the Tibetan plateau and lower Mustang is called Tethys zone. In the Tethys seabed sediments are also available. Dhaulagiri and Annapurna mountains are attached to Mustang. There are also many glacial sites of the ancient period.

An interesting new technique is the analysis of deep seacores. The skeletons of minute creatures form much of the seabed sediments, and as these creatures are very sensitive to temperature changes, the species represented in a core sample give a clear indication of the range of temperature at the time of their deposition. Although the climate curves obtained from the above techniques belong to relative rather than absolute dating, the climatic curve obtained from deep sea cores closely resemble that of the glacial and interglacial curve, and as the cores can be dated in absolute terms, this should, if the two curves are complementary, date the glacials and interglacials also.

Increasingly, more evidence has been unearthed to show that man's birth place is Asia. Recently, fossils of *Ramapithecus* have been discovered at sites in Pakistan and in China.

A tooth of the "first possible ancestor of man in Nepal and oldest in Asia" has been found near Tinau Khola (river) a couple of miles from Butwal. The discovery made in December 1980, helps to fill the geographic gap in the record of early hominoids between India and China. The age of *Butwal Ramapithecus* is very important. Its preliminary age determination of eleven million years, based on a study known as paleomagnetic analysis, is over one million years earlier than the next oldest dates for Asian specimens. *Ramapithecus* is the earliest fossil primate which many anthropologists believe to be a direct ancestor of man. Rare specimens have previously been found in Kenya, Pakistan, India and China. Mustang area is not so far from Butwal. On the other hand, upper Mustang is geographically in the Tibetan plateau.

Neither can the Tibetan plateau be ignored as possible place of man's origin. In the tertiary period, the geographical features of this region were quite different from today. Successive

explorations in the *Qomolangma* (Jolmo Lungma or Mount Everest or Sagarmatha) area carried out under the auspices of Chinese Academy of Sciences have produced abundant scientific data. We know from the flora here that in the Upper Pliocene, the ecological environment in the Mount Xixia Bangma region at that time was marked by sub-tropical climate with a yearly mean temperature of about 10ºc and precipitation around 2,000 mm. In 1975 at a site in the Jilong Basin, which is 4,100-4,300m. above sea level, on the northern slope of Mount Xixia Bangma in the middle section of the Himalayas, fossil remains of the Pliocene three-toed horse (Hipparion) were found. This species of forest-grassland dweller is at home in a temperate climate. Sporo-pollen analysis has also produced evidence of a flora that included *Loropetalum*, palm, quercitron, goose foot, cedar, pea and other sub-tropical plants, which tallies with the climatic conditions shown in the composition of local clay minerals. A geological report made on April 16, 1977 by a Chinese geologist, Cheu Wanyong, concluded: "In the Pliocene the Himalayas were about 1,000 metres above sea level and not as pronounced a barrier to the monsoon from the Indian Ocean as it is today, hence both the south and north slopes were benefited by that seasonal, warm, moist wind. It can be safely said that the Himalaya and Tibet Plateaux have since the Pliocene been rising at the rate of approximately 0.025 - 0.03 mm. per year, with an obvious higher rate of uplift after the Middle pleistocene. The present day elevation is at least 3,000 metres higher than in Pliocene times. "This information is of great value. It suggests that during the transition from ape to man both the Tibetan Plateau and the Himalayas in Nepal were regions still suitable for the evolution of higher primates, which makes the regions a hopeful place for seeking missing links in the evolution of man.

In case we find *Ramapithecus* in the Mustang area the question arises as to how to solve the dating problem. Taken in relation to the full range of archaeological time, the upper limit of the carbon-14 covers less than 10% of the time span. So other methods for dating earlier periods were essential.

The most widely used method for obtaining dates earlier than those from carbon-14 analysis is potassium-argon or K/Ar analysis. Rocks from volcanic eruptions contain small amounts of the isotope potassium-40, which decays into argon-40 at a known rate. The half life of this process is greater than that of carbon-14, so that the technique is useful for much earlier dates. Unfortunately, while carbon-14 has an upper limit of about 70,000-50,000 years, the K/Ar method has a lower limit of about 600,000 years. This gap of some 500,000 years between the two methods covers a most significant period in man's physical and cultural development. To fill this gap other isotope methods are being developed based on the same principle, e.g. thorium/uranium and protactinium/thorium. These new methods seem likely to fill the gap as their half-lives are much more suitable for this time range than K/Ar. In the field of prehistory there are also other methods which are known as palaeomagnetic analysis.

German scientists are working in the Mustang area with the aim to know the whole man, the objects, artistic or otherwise made by him and the environment in which he lived, videlicet, the climate, the flora and fauna and man's social, religious and economic status, including even the probable guess as to the density of population, and finally the stage or stages by which he reached the particular stage under study. Consequently, the archaeological excavations, and the preceding and consequent explorations, have become something like the work of Sherlock Holmes, where nothing is neglected, and much less is discarded. Most minute changes in the colour of the soil or earth excavated are recorded, collected and scientifically examined, and the same care is bestowed on the ash or charcoal as on a precious object of art. If it is an architectural monument, not only is it carefully drawn and photographed, but all possible means are employed to learn about its significance

- about the nature of the stone used and its source, about the technique of manufacture. So the German scientists *already* learned not only about its architectural styles but also about the social, economic, industrial and religious *milieu* which were responsible for its creation.

After going through all these issues, we can come to conclusion that the work which is going under Nepal-German Project on High Mountain Archaeology, which can be considered as an important task for Nepal, will not only lift the human history of Nepal very high but also present the Nepalese prehistoric picture in the globe, a matter of pride to the Nepalese.

Although the project is very important in the Nepalese context, I would like to state one thing clearly here at the end. The German scholars who are doing their work in Nepal are based on modern science. In Nepal, there is no laboratory for experiment on modern atomic science. In India also there are few research institutes, no more alternatives. It is not possible to do our laboratory work even in India. We must look towards the European countries for this. Prof. Dr. Schuh has pointed out in his introduction that as the Northern Mustang area is restricted for the foreigners, explorations and excavations based on modern science can be done in 1992-93 by the Nepalese archaeologists only and no German can go there. At present we do not have required manpower as well as equipment to deal with the high modern technology. It can, therefore, be strongly recommended that the German scholars also are included in the northern Mustang Archaeological excavation work by giving special permission. Otherwise, our archaeological sites will be destroyed, because as archaeological excavation means re-building of history on one side, it is on the other hand destruction of the site too. Once it is destroyed it cannot be regained. It will be unjust to the nation if full responsibility is given to our officials who are trained only for a period of six months. Therefore, immediate attention is needed to be given to the matters by the concerned agency. It will be better to take wise action timely instead of regretting later.

April 8, 1993

People's Participation in the Management of Local Affairs in Southern Mustang in the 19th and 20th Centuries

- M. L. Karmacharya

1. **Introduction** : The points I would like to discuss herein do not constitute a paper as such. This is only an outline of what I could see when I came across some old documents relating to the management of local affairs in the Thak Satsae and some other parts there around.

In one of the documents the Thak Satsae region is described to have been bounded in the north by the Chimkhola across the Gurase-dada, Khanikot and the Kali Odar; in the south, by Daran Dhunga, Dhulya Odar and Badar-jung; in the east by Rakte; and in the west, by Surti Charaune below the Gauda Khark in Dah Bugan.

Similarly, it is described to have been composed of 13 villages with 10 wards (toles or localities) as they were called. They are Tukuche, Khanti, Kobang, Larjung, Nakung, Bhurjungkot, Naphrungkot, Dhambu, Titi, Taglung, Kuncho, Lete and Ghasa. [Situated between Tukuche and Ghasa, this Satsae region so called after the seven hundred households in the area is also called Thakali region because of the Thakalis residing there. [cf. *Mechi dekhi Mahakali Vol. 3. p. 526.*]

The local affairs, so to say, the customary rules and regulations (sometimes known as such) in this region were looked after and managed by and with the consent of the local people even when nothing sort of legal provisions like the Village Panchayat Act or regulations could have been introduced giving civil rights to the people. (The first such regulation was introduced in the kingdom as early as 1926 only when local people were given judicial powers to settle minor local disputes in a certain western district. [cf. *HMG, Village Panchayat Act, 1949*]. This system, so far I could gather, persisted even until recently upto 1950s i. e. even until the democratic form of government could be established in the center and the concept of local self-government could have, by way of legal enactment, entered into local administration

This, in my view, may be the influence of the independent political system that existed in the southern Mustang during the 17th and 18th centuries as Prof. D. Schuh had pointed in one of his papers entitled 'Political Organizations in Southern Mustang During the 17th and 18th centuries'.

Prof. Schuh had sometime back published this paper in the *Ancient Nepal Vol. 110* in which he had spoken of 'numerous political entities which recognized the suzerainty of the King of Jumla' and pointed to the 'interesting fact that this fragmentation into small political units paved the way for the development of forms of the political state organisations which seems to be unique even for the rest of Asia'. His views were based on several copies of the written constitution called *bem-chag* still kept in archives of different places in the area, to which Charles A. E. Ramble and Michael Vinding as well as himself had access.

In the strength of the three different versions of the *bem-chag* he was able to photograph, he had, in his paper discussed besides the political structure, the organisation of labour and trade, internal economic organisation, regulations concerning the monastery, and customary laws and regulations of Marpha, which, according to the quite separate *bem-chag* of Chimang was one of the three separate political units of that time, viz., Thag, Thini and Marpha.

For the purpose of our presentation we are concerned here only with the last three subjects relating to labour and trade, economic activities and customary rules and regulations. There are several other evidences, which we presume, are existing still to show that local communities in different villages in the area had, while recognizing the rules and regulations of the Government, formed themselves into some sort of local self-government, at least as far as social affairs are concerned, and looked after the management of the same in these fields in their own way. Besides, they had, in the assemblage, their participation in deciding upon new regulations and additions and amendments on the existing ones. As for example, 13 villages in the Thak Satsae region formed themselves into an organisation to look after and manage the general affairs in the whole of the region, while one component of this organisation, Ghasa, looked after and managed the particular local affairs peculiar to itself. In case of any matter of local concern to two or more villages, the villages concerned settled it among themselves, as we shall see in the case of Thini and Jomsom, without any influence or interference from outside. This is unique in the sense that inspite of the established central Government in Kathmandu and inspite of the rules and regulations enforced by them for the entire Kingdom, time and often the local affairs were thus managed by the local communities in a body or by common consent without any interference or initiation from Kathmandu or anywhere else under their instruction or otherwise, an example for which may be taken in the case of decisions arbitrarily taken up by the community in Thak Satsae sometime in 1955 (i.e., after the setting up of the democratic form of government in Kathmandu) to use both the coercive and persuasive measures to implement the decisions of the central Government to do away with the custom of gambling during the Tihar festival. The basis of this presumption is the discovery so far made of a number of documents that show such arrangements existing until recently in Thini and Ghasa in the same and adjoining areas.

Thanks to Prof. Schuh and management of the Nepal-German Project on High Mountain Archaeology I recently had an access to some unpublished materials relating to this subject. For our purpose I will devote mainly on three different documents the photocopies of which are lying with the Project.

2. Thak Satsae Dharma Panchayat Document: It would be desirable, first of all, to discuss the Thak Satsae document which will be called TSD when necessary. This was photographed by Prof. Schuh in 1990 in Ghasa. This is the 'constitution' of the Dharma Panchayat Thak Satsae formed for the declared purpose of managing, by an assembly of the Mukhiyas of all the 13 villages comprising Thak Satsae, the local affairs including social customs, settlement of local disputes, promoting

the sense and spirit of cooperation to the Government (obviously the central Government in Kathmandu) in the interest of promoting nationalism, communal harmony and organisation, spread of education, prevention of epidemics and other diseases, trade and commerce, cottage industry and handicrafts, and taking strict measures against evil traditions and undesirable activities infesting the community.

This document is written in Nagari script. The language is pure written Nepali, presumably written towards the 1950's after the formation of the Nepali Bhasha Prakashini Samiti (estd. 1913), a Government publishing unit, which had started campaign to standardise the Nepali language. It has no date mentioned, nor any seal affixed on. It seems to be a copy of the official document which is kept securely stored under three locks, distributed to a member-Mukhiya of a village as is required to be done under the 'constitution'. As a true copy of the official document, however, it had to be endorsed with a seal or signature and why it was not done so is a matter to be ascertained as it gives rise to a doubt that it may either be a draft or not a true copy. But the later portions or additions contained in it as records of different decisions made on different dates from 1949 to 1959 as well do not confirm it to be so.

The decisions made in 1949 were meant to regulate the custom relating to the funeral rites, while those made in 1951 were meant to amend the same, and these decisions are recorded to have been made after due deliberations by the Mukhiyas and the *bhaladamis* (local prominent persons) assembled in the 'Panchayat Kachahari' meaning assemblage of the said Dharma Panchayat (quite different from the 'Manyajan Kachahari' formed in Dang Deukhuri under the 1926 Sanad with powers to settle local disputes. (cf. *HMG Village Panchayat Act, 1949*).

It shows, in the absence of other documentary proofs, the 13 Mukhiyas representing 13 villages in the Thak Satsae region formed themselves into a Dharma Panchayat under a 'constitution' adopted by themselves and looked after the local affairs almost independently, as one example cited above relating to the Govt. measures to put a stop to the custom of gambling showed they themselves took both coercive and persuasive measures for the purpose.

On whose initiation the Panchayat was thus formed is not clear, nor is clear the legal authority under which it could function as such although it is found sometimes written that it had the recognition of the Government. [cf. *Mechi dekhi Mahakali Vol. 3 p. 527*]. The objectives listed in the 'constitution' as mentioned before as well as the rights and duties outlined therein as to work under the existing rules and regulations and customs and manners and also the decisions taken arbitrarily in matters of local interest, however, make it clear that it was the sheer interest of the local people, in the context of the changed time and circumstances, to preserve and safeguard their community's life that had goaded them to act in that way.

For the purpose the 'constitution' had a provision to annually elect a Working Committee of 13 members - all the Mukhiyas of the 13 villages of whom the Chairman was called Mir Mukhiya, the Vice-Chairman, Upa-Mir Mukhiya, and the Treasurer, Tahabil Mukhiya. The meetings were held generally two times a year - once in the month of Shravan and the other in the month of Ashwin, which were called Shravan Tritiya meeting and the Vijaya Dashami meeting respectively after the days on which they were held. The meetings were participated in by *kuriyas* and *bhaladamis* as well. *Gunduls* may also be invited to take part as observers. As for *bhaladamis*, they were to be elected as such by the concerned villages (which is clear from one of the Ghasa documents which we are going to discuss later in this very paper). The number of these participating *kuriyas* and *bhaladamis* was fixed as

261 and 32 respectively, supposedly to represent their respective villages. The *gunduls* if ever invited would be not more than one from one village and they had no right to speak. The venue of the meetings was Kobang.

The records show the Panchayat had the right to impose fines and penalties as well, which ranged from Mohar Rupees (herein after referred to as Re. or Rs. only) 2 to 500 according to the nature of the offence committed. To quote a few examples, violation of any existing rules and regulations was punishable with a *danda* amounting to Rs. 500 if the case involved anything valued at Rs. 5,000; direct approach to a legal court by by-passing the Panchayat, with a *danda* amounting to Rs. 50 in case of a boy and Rs. 25 in case of a girl; playing of instruments at the time of carrying a dead body or its remains or of burning it, with a *nit* amounting to Rs. 10; carrying of a dead body by a person of a caste other than that of the dead person, with a fine amounting to Rs. 5; cutting of *nigalo* plants without any permission, with a *nit* amounting to Rs. 3; grazing cattle and collecting herbs in the restricted areas, with a *narsari rakam* fixed by discretion; failure to set up a wooden bridge over a certain place called Taglabagar by the 15th of Kartik, and later, through an amendment, by the 21st of Jestha and at any time during military operations with a *nit* amounting to Rs. 50. These examples also serve as samples as to show the expanse of the local affairs the Panchayat looked after and managed.

Besides, the Panchayat tapped various sources as dues and revenues for its income. It charged *dai dastur* and *bhalapani* under discretion on settlements of disputes or dispension of justice; collected *kharadari* amounting to Rs. 8 per shade for grazing on the high altitude (lek) and Rs. 2 for grazing in a particular forest called Phache Kamang forest. In this context can be mentioned also the death tax levied at Re. 1 for a *kuriya,* Moharu paisa (herein after referred to as paisa only) 50 for a landless person and paisa 20 for an untouchable person; and also birth-tax levied at the same rate. It had also created a reserve fund out of which to meet the expenses for control of epidemics or any other emergencies in the region. Arrangements were accordingly made for depositing in this fund the fees obtained for granting permission to organise the game of lottery as well as marriage tokens of Rs. 3 in the minimum raised from every married couple.

The Panchayat, similarly, managed customs and manners in its own way. To cite a few examples, the *pujas* during the Bada Dashain had to be done through the Mir Mukhiya; last rites may be done by *jhankri* instead of *dumbo* or by a *brahmin* if the circumstances so demand but can in no circumstances be done by both the *jhankri* and the *brahmin* priests at the same time; no animals can be killed when rites are done by a *jhankri* priest; and a person so desirous may make a cash gift called *malam* to the Lama *dumbo* at his residential *gumba* and no other thing could be gifted, nor any one is allowed to go over there on the occasion.

The Panchayat had also taken special measures to consolidate their traditional "banking system" known as "*dhikur*" which gave loans to one in need for business or other purposes. The Panchayat was committed to run the system smoothly "for the benefit of all" and for the "maintenance of peace" in the region. A person proved guilty of working against it was liable to a fine of Rs. 500 or more according to the nature of the offence.

These are only the samples to show how the local people, as far back as fifties were conscious enough to preserve their social customs and to maintain peace and harmony in their society with their own local and voluntary efforts.

3. **Jhumsumba Document :** The people of Thini and Jhumsumba (Jomsom) were not less conscious about their local interest. As this document dated May 1951 which was also photographed by Prof.

Schuh in Thini in 1990 records, the people of these two villages had long before in 1938 concluded an agreement to promote their local interest. Although originally an agreement on sharing of water for irrigation purposes, this present document records a number of decisions regarding matters of social importance of the two villages.

Similarly, as the TSD document, this Jhumsumba document also is written in Devnagari script, and the language is pure written Nepali inscribed in 1951. It bears the signature of the Mukhiyas and *bhaladamis* of both the villages. It clearly mentions itself to be an agreement arrived at with the common consent of the people of both the villages. Through this document they decided upon restrictions to cut down trees without permission from the *talukdars* of both the villages, cut grass for 5 days in the dark half of the month of Bhadra, allow cattle to graze at night in the fields belonging to others, awarding punishment by both the parties for one and the same offence, and growing *uba* and *phapar* in the lands other than one's own.

4. **Ghasa Village Document** : More such arrangements are found to have been made by the people of the Ghasa village, the one component of the Thak Satsae Dharma Panchayat. Although mostly concerned with the protection of the forests and forest products and the grazing as well as agricultural lands, this document contains records of decisions made on different dates from as early as 1868 to 1954 on a variety of subjects of local interest and concern as hunting, management of labour, trade and industry, observance of festivals, keeping buffaloes in the village and so on.

Although written in Nagari script the Nepali used in this document is mostly a locally spoken one in the early part while in the later parts it has grown purer to become a written one. It is a copy of the document completed under the signature of the prominent local people. It was photographed in Ghasa also by Prof. Schuh in 1990. As clearly stated at the outset this document is the outcome of a complaint made by the local people against the *bamdej* (bonds or pledges) made in 1868. Evidently an agreement to govern themselves this document in a sense is a pledge made by them to abide by for the interest and benefit of the entire Ghasa village, a component of the Thak Satsae Dharma Panchayat formed in the early fifties.

Under the provisions of this document, the Mukhiya and the Jethabudha of the village, as well as the *gundul* under their instructions, were empowered to enforce the rules and regulations and impose fines and charge dues as fixed and agreed to by the people.

It was, as is clear from the document, with the authority of the people that the rules were so made and time and often reviewed, amended or added with further provisions as time demanded. The reviews, amendments and additions were made most often in the month of Bhadra, presumably in view of the deliberations made in the Thak Satsae Panchayat meeting which was annually held first in the earlier month of Shravan which, according to the TSD, the Mukhiya of the village was also obliged to attend.

As this document shows the village people had their participation in the local affairs in various ways. They had managed to protect their village from the wild beasts menace by providing incentives to the hunters to kill bears, tigers, porcupines and jackals. They had regulated voluntary labour for the good of the village by making a punishable offence not to offer labour for building roads or bridges etc. The setting up of a liquor shop in the village was regulated by imposing yearly dues. Similarly, the sale prices of the *dokos* made in the villages and elsewhere were fixed according to the size and the localities they were sold. The duties of observing festivals of Siddhapuja as well as performing religious services in the Buddhist temple and *dhonaje* in

Chaitra, Falgun and Bhadra were assigned to the Gunduls. Since 1954 the buffaloes were not allowed to be kept in the village. (The TSD shows this restriction was later lifted in view of the demand for milk-product like *ghee*.)

Besides, the villagers, through this document, regulated the grazing of cattle, cutting of trees, collecting of grasses and pine-leaves, releasing of timber, clearing of road, building of bridges, as to be done only in a particular area and that also in a particular part of the year. Similarly, rates of wages and travelling expenses were fixed for particular persons. To cite a few examples, one engaged for cutting fuel-word, tilling land for growing corn or weeding out plants was given wage amounting to 20 paisa if he is a man or 16 paisa, if a woman, while one engaged to carry a bundle of *bhorla* leaves to the place of *dumbo* was paid 50 paisa. A *gundul*, engaged to perform religious services, was paid 16 paisa a day. As for travel expenses, one assigned to military duties was paid 75 paisa a day as also a person assigned to attend the panchayat meeting as a *bhaladami*, who, however, was later, paid Rs. 2.50 a day. As for promotion of *doko*, *chyatro* and *lutho* making industries, special provisions were made for allowing cutting of *kharsu* bamboo and *nigalo* canes.

Although a component of the Thak Satsae Dharma Panchayat, this Ghasa village is, sometimes, found to have acted in its own independent way in matters of its local importance. It is evident also from a provision introduced towards 1948 which provided for choosing by lot a person as *bhaladami* to attend the Panchayat meeting in spite of the notice served by the said Panchayat specifically to his name. Similarly, restrictions on buffaloes were imposed only in 1954 when the Thak Satsae Dharma Panchayat had imposed it as early as 1951 only to lift it up in 1955.

5. **Conclusion** : This in short is an account of the local people's participation in the local affairs in one part of Nepal long before the introduction of the local-self government laws in the form of Village Panchayat Acts by the Centre for the whole kingdom as is seen from the three documents in the local affairs in some parts of the Southern Mustang. How could this have been possible and why could people remain content with participation only in affairs other than development ones is to be seen by digging deeper against the thesis propounded by Prof. Schuh on the basis of the *bem-chag* discovered by Charles Ramble, Michael Vinding and himself.

KAGBENI : Structural Analysis of Dendrochronological Data

- Niels Gutschow

Introduction

In October 1991 a survey of Kagbeni village was done with the assistance of Robert Kostka, resulting in a map scale 1:200, covering the ground floor level of the castle with the historic core and the surrounding courtyard houses. On the basis of this survey the remaining three levels were covered with measured drawings in April 1992 by Bijay Basukala, Gyanendra Joshi and Asharam Tvayna. At the same time measured drawings were prepared of the castle, Waya Tsherings's house and Pema Drolkar's house.

Only after repeated field trips an approach towards the understanding of data provided for by dendrochronology developed. Observations made on current demolition and construction sites at Kagbeni prepared the ground for a careful selection of pillars, joists and beams as samples for a dendrochronological study. Burghard Schmidt had worked out a tree ring curve in 1993, based on about 400 samples collected in March 1989 and October 1992, spanning now the time between 1455 until today (ANCIENT NEPAL 130 - 133, 28).

Based on this tree ring curve and taking advantage of the measured drawings of the village in order to identify the location of every sample we undertook a dendrochronological survey, the result of which is presented below. The samples collected in March 1993 were analyzed by the tree ring laboratory of the University of Cologne.

HOUSE 1 : Pema Drolkar

The house of Pema Drolkar ranks without any doubt as the finest residential building of Kagbeni. Even the casual visitor might identify four stages of development without taking into account any historical data.

A structural analysis alone reveals the following :

Initially a building developed around a large courtyard, the ground floor fully arcaded on four sides and probably from the beginning used as stables. Two store rooms on the northern side flank the entrance from the covered lane. At second floor three large pillared rooms are placed on the western and northern sides of the building, while narrow rooms on the remaining sides probably served as store rooms. The western room with its raised ceiling is fashioned in an extraordinary way. The walls display paintings depicting the four Guardians of the World, two Bodhisattvas and three Tathāgatas on the southern wall. The two pillars with their capitals and the lintel across the entire room are craved and fully

however, would lead to the assumption that both halls were built at the same time. Even more confusing is the fact that the beam of the roof above the Lhakhang and the pillar of the arcade (1883/1887) are of the same period. We must therefore believe that the building underwent a restructuring in 1888, probably causing the courtyard to be enlarged and that some time later the Lhakhang was added, reducing the courtyard to half its size.

To conclude, I suggest, that the house of Pema Drolkar was built around 1860, using timber that had been stored for some 12 years or was or had been acquired from other sites. About 28 years later, the building was restructured. The structural analysis provides no hint to what extent and for what purpose this was undertaken. In a third phase of construction the Lhakhang was added to house a colossal statue. This phase cannot be dated on the base of dendrochronological data at hand. We have to guess that it happened at the beginning of this century.

HOUSE 2 to 9

Besides the noble house of Pema Drolkar, 28 samples from 16 houses were collected, 11 originating from ceiling joists, 7 from lintels, 6 from beams and 4 from pillars of which 3 were cut to size while one (sample 21) preserved its full diameter. Of two houses (house 5: Mingmar A and house 14 : Norbu Drandul) samples were collected from three levels, while at the four-storeyed house of Samdruk (house 6) seven samples (12 - ; 41 - 44) originate only from the two lowest levels.

To start with the horizontal levels the dates of those cores collected at first (ground) floor level, there is a wide variety covering roughly three hundred years, from 1572 - 1886. The 23 dates at hand may be arranged into three groups : With three consistent dates referring to the year 1572, it seems sure that Samdruk's house (No. 6), prominently located opposite the castle, is the oldest house of the village, having probably been constructed at the same time as the castle itself. Three houses located in the most clustered part of the village (house 2 : Waya Tshering, 1680; house 7 : Phuntshok A, 1630; house 8 : Pema Ongdi, 1605) provide dates from the 17th century, while four houses in the same area (house 3 : Norbu Sangpo A, 1770; house 5 : Mingmar A, 1770; house 10 : Norbu Sangpo B 1730; house 13 : Kemesha, 1770) extend the range of dates for another century up to 1770. The date of a pillar of the northern gate refers again to 1770, being almost a part of the collapsed house of Kemesha that provides the same date.

A third group of dates are found at houses on the eastern side of the castle, starting with the house of Norbu Drandul (house 14, 1827; in fact Norbu Drandul owns only the ground floor from where the sample originates). A few years older is the sample taken from the lintel of the entrance door of To Tshang's house (No. 4, 1814), but this one is considered a repair of the largest four storeyed building of the village which fell into ruins a generation ago. The house of Karma Tshogle (No. 15) and a beam of Ringzing's house (No. 16) are dated to 1853 and 1848. Of the 'old style' houses north of the castle, the house of Phuntshok B No. 12) provides the date 1847. These dates that centre around 1850, are supplemented by dates from the monastery (chöde) from 1860 and of the southern gate from 1885.

The dates from the upper levels present again a remarkable consistency for the house located in the village square, facing the castle. Four samples from the house of Samdruk (No. 6) identically date back to 1771, whereas a sample from the neighbouring house of Mingmar A (No. 5) dates back to 1770. The sample from Norbu Dranduls second floor (No.14) is much younger, dating to 1858.

While in Mingmar A's house (No. 5) the date of the second level is the same as that of the first

painted. Obviously this room served as the ritual room of the noble family in the initial stage of development. Known by the name of 'Kanjur Simkhang' (gzims-khang-honorific term for 'room') the room recalls the Kanjur corpus of sacred books that were once stored here.

In a second stage of construction activities the Kanjur Simkhang seemed not to be appropriate any more to demonstrate the status of the family. A new hall of 330 cm width, the Lhakhang was therefore added to the Simkhang side, thus crossing the former courtyard. The new hall had to be made 120 cm higher than the old hall in order to house a colossal Vairocana statue on a raised pedestal and enshrined by a fully carved tympanum. The new hall is supported by a simple pillar and capital structure, while the capitals of the initial arcade display detailed carvings based on lotus patterns. Below the colossal statue, however, a massive block of stones serves as a kind of extended socle. In a third stage of development the building was transformed into a lodge in 1986. The two long narrow rooms on the eastern and southern sides of the courtyard were rebuilt and subdivided into four guest rooms. In 1991 three more rooms and a glazed conservatory were added on top of the roof, and an additional guest room and stables built to the South.

If we correlate the six dates from the dendrochronological campaign in March 1993 and three more dated from the previous campaign in 1992 with the analysis presented above, we understand, that data provided by dendrochronology need careful consideration.

There are three groups of dates, one covering the time 1848 - 56, one around 1887 and one of the second half of the 18th century, thus dating considerable further back. The beams above the lane (sample 28 = 1856) and the stable (sample 29 = 1848) preserve their original size and enable us to identify the felling year exactly, thus these samples provide the more reliable evidence. Even after having learnt in Kagbeni that bearing members are considered as rare construction materials that is eventually reused, I feel inclined to say that the basic structure of Pema Drolkar's house including the Kanjur Simkhang, was built around 1860. Especially the date of the pillar of the large hall (sample 46 : 1858) and the date of the ceiling board from the Kanjur Simkhang (sample 48 = 1859) support this assumption. However, what remains irritating are the dates of the pillar in the courtyard (sample 30 = 1887) and the beam above the eastern arcade (sample 31 = 1886). Incidentally, these dates are almost identical. Both timbers are cut to size (14/14 and 10, 5/8 cm), and so they do not necessarily provide the date of the felling year. Moreover, the beam seems to have been recovered from somewhere else fairly recently, being reused in 1986 at the time the house was transformed into a lodge. The dates referring to the obvious later addition, the Lhakhang, are again confusing : The beam (sample 32 = 1856) that supports this structure belongs to the same group that was used for the first phase of construction around 1856, whereas the beam (sample 47 = 1883, cut to size 11, 5/13, 5 cm) above the high room is 27 years younger. Even more confusing seems to be the date of a board (sample 33 = 1775) that bridges the gap between the ceiling joists above the extended arcade below the Lhakhang. Dates of additional boards as presented in Ancient Nepal (1992/93, Nos.130 - 133, p.30) refer even to 1765 and 1769.

The only possible answer to the remarkable range of dates (1765 - 1883) is that the Lhakhang was built some time after 1883, possibly around 1900. Certainly, the boards above the arcade have been reused, having been salvaged from an older site. But the same is true for the beam (sample 32) that supports the structure. The dilemma is that the structural analysis tells us that the Lhakhang represents an addition to an older structure, making the closure of a window of the Simkhang necessary and obscuring the arcade of the courtyard. The dates provided by dendrochronolgy,

level, the dates from Samdruk's house (No. 6) differ by 99 years, that of Norbu Drandul's house (No. 14) by 31 years. The dates of the few explored third levels differ again condiderably. At Mingmar A's house (No. 5) they are 86 or 117 years younger than those of the lower levels, at Norbu Drandul's (No. 14) the difference is 105 years; the felling date of 1963 suggests a recent repair of the roof, as the third level represents the uppermost one. Replacement of timbers at roof level must have been the rule over centuries.

The samples from Samdruk's house (1572) represent the earliest evidence, suggesting, the village developed at the same time as the castle itself, forming a small nucleus in a short distance and thus possibly framing the trade route. The limited number of samples do not allow to assert that Samdurk's house is the oldest one nor that it is the only one of the early phase of the village.

Timbers from houses that more or less form an arc west of the castle date from 1605 to 1680, suggesting that some 15 houses (not households/meptra) existed towards the end of the 17th century, constituting an extremely dense cluster and keeping a distance from the still free-standing castle. The house of Waya Tshering (No. 2) was finally closest to the castle. It is told that at the time of construction, probably around 1680, the owner challenged the height of the castle itself and subsequently was ordered by the king to pull down an entire storey to come down to a more decent height respecting the dominant structure of the royal building.

The fact, that the timber of the second levels of two prominent houses in the village square are of a remarkable consistency, being dated to 1770 and 1771, suggests a major event that led to the rebuilding of these houses. Although the samples collected for this study present a very limited scope, it is striking, that three more samples date to 1770 (samples 23 and 24) and 1730 (sample 20).

Houses east of the castle provide ample data to prove that between 1850 and 1860 the entire area was built up. As the house of Pema Drolkar (No. 1) as well as the chöde date to the same decade, we must believe that the village experienced an affluence that probably reflected a change in status, leading to a considerable expansion.

The dating of a pillar in Laksom's house (No. 11) to 1920 proves, that on the northern edge the castle's wall remained fully exposed until very recently. In the same way, Pema Ongdi's house was built beside Laksom's house, and on the western side Hrewo Pema built a house against the castle wall some 30 years ago.

THE CASTLE (KHAR)

Altogether 21 dated samples from the castle have been taken : Seven from ground floor level, five from the second level, five from the third level and finally four from the fourth level. No timbers survived on fifth floor level. There, the joists and beams have been salvaged, only a row of holes indicate the level of the ceiling joists.

Six samples were collected from pillars, four of which are those characteristic ones that extend over two storeys in order to support the wall of the third storey. The two remaining pillars are from the hall of the third floor. Seven samples originate from lintels. those second most important structural elements that bridge the narrow passages that are up to 120 cm lower than the height of the rooms (first floor 243 cm, second floor 326 cm, third floor 240, fourth floor 242, fifth floor 210 cm). Sample 57 is taken from the lintel of a window. Five samples are from ceiling joists of different dimensions as the rooms they span are of varying width (ground floor 118 cm - Ø 11 cm; third floor 225 cm - Ø 13 cm). Two of the samples were stumps left in the wall as they have been broken off earlier to be reused at new construction sites. One sample (No. 38) was cut from a fragment of a ceiling joists that remained in

sitū Besides these types of timber that have also been collected from the residential structures of the village, three samples are of a different type. Two of these (No.39, 60) are thin boards which form the top of the holes for the removable timber shuttering supports used during construction. As the shuttering moved the support beams were taken out, the holes and these boards remained in place. These holes could later be used for scaffolding in case repair work needed to be under-taken.

Seven samples could be dated to the year 1568, providing the earliest evidence so far found in Kagbeni. Five of these have been found at second floor, one at third floor and one at fourth level. Surprisingly, none is found at ground floor level.

The most crucial structural elements, the pair of pillars extending over two storeys, are dated to 1586 (sample 1) and 1596 (sample 2) at the northern entrance and 1572 (sample 5) at the western entrance to the castle. The remaining dates cluster around 1600. ranging from 1581 (sample 3) to 1622 (sample 4). The exceptional date of 1683 for a lintel at the western entrance can be explained more easily, as the western extension represents a more recent reshaping of the access in order to comply with changing concepts of security and defence. While the straight northern entrance remained unchanged, the main entrance at the western side, from where a staircase led to the upper levels, was changed into an L-shaped one.

The crucial date of 1622 (sample 4), taken from a lintel appears again on the second level, being related to a lintel above the area of the northern entrance. And it appears again on the third level, where one pillar of the extant hall is dated (sample 52). A surprise disturbs our notion about the consistency of building material in a single building again : The second pillar of that hall is 53 years older, being dated to 1572 (sample 51). Obviously, the castle remained in a process of restructuring throughout the end of the 16th and early 17th century. It is naturally the top floor that was open for interventions to respond to changing needs. Apart from the pillared hall on the third floor it was probably only the fourth floor that offered space to be considered a 'room', while the fifth floor might have consisted of a large, but only partly covered room. The two rooms of the fourth floor facing north and east must have been impressive halls to serve for various kinds of gatherings. We must therefore assume that the south eastern corner of the castle was reshaped in 1665 (sample 57) in the course of which a new window was added. Another window was added in 1779 (sample 58, 59) to provide more light to the eastern hall that had a broad projecting balcony.

There is one sample from the fourth floor, the date of which does not at all fit into the pattern explained above. It originates from a board of a putlock on the northern facade that remained there from shuttering. The date 1568 suggests a reuse after a period of more than two hundred years.

The following analysis of the data described above certainly must be conjectural as our knowledge of mud structures of the Tibetan/Nepalese plateau is fairly limited. Without doubt, construction of the castle began in 1568, but we cannot say anything about the shape of the building as the outcome of a first phase of construction. We believe that the central part of the castle with the northern and western entrance was constructed within a short period, probably three storeys high. Some time later, probably around 1600, the castle must have undergone a considerable change. Disturbances in the area of the northern entrance suggest that new walls were introduced on the ground floor level as well as on the third floor level, although it cannot be said why these walls were introduced.

Again some time later, probably around 1622, the castle was reshaped. A lintel from the ground floor, a lintel from the second floor and pillars from the third floor testify intervention on the

crucial levels - at a time when more storeys were added or reshaped completely.

The lintel from the western entrance, dated to 1683 suggests the redesigning of that portion of the castle towards the end of the 17th century. The end of the 18th century saw massive interventions and changes of the fourth floor, probably including the addition of the fifth floor.

Concluding remarks about construction and reconstruction of houses in Kagbeni

Dendrochronological evidence under the conditions of mud and timber construction has not been discussed to date, neither for the Central Asian plateau, nor for similar regions of the world. We know in fact very little about the historical perspective of mud structures in semi-arid zones. Several questions arise which cannot satisfactorily be answered with the experience at hand. The present study presents only a first step from an architectural survey of existing mud structures into the historical dimension.

Tapering mud walls 15 metres high with a thickness of 172 cm at the base must be considered extremely durable. However, once the crown of the wall remains unprotected by a projecting layer of cyprus and juniper shrub the structure will suffer from the rains, although the average precipitation is rather low. The constant wind which usually starts at ten in the morning and which prevails until seven in the evening, also has an adverse effect on the mud walls. Those walls that are exposed towards the Southwest, the valley of the Kaligandaki, have eroded by nine centimetres over the past four hundred years. While the flat stones and boards that form the top of the putlock holes remain in place, the surface of the mud with its enclosures of gravel erodes. Finally, earthquake must be mentioned as a possible if not major threat to these structures. As there are no historical records of such events, we may only assume that earthquakes at certain times must have led to a considerable reshaping if not reconstruction of collapsed structures. As joints between sections of mud walls are virtually nonexistent, earthquake must result in gaps once the walls are inclined. Several such gaps can be observed at the castle of Kagbeni, but it cannot be said with certainly that these originated from earthquakes. The large house of the noble Hrewo family in Jharkoṭ suffered the collapse of an end wall a few times. Only a trained eye will be able to identify repair work following such events.

To sum up, climatological factors might have contributed a little to reshape existing buildings, and about seismic effects little can be said for the time being. Economic and social changes must be considered as the driving forces behind reshaping. To start with, the most recent change that can be remembered by the villagers, is the move from the clustered core towards the periphery. It is the move from a well-protected but dark environment to the courtyard building type, and at the same time a vertical movement from the top of a four-storeyed building down to the second floor of a building which is now limited to only two levels. When Samdruk moved from his home from the house (No. 6) in the village square towards east in February 1993, he even confined his new residence to the ground floor, hoping for further extensions. Altogether 18 new houses which follow this trend have been built over the past two generations. The latest moves were made by Samdruk (house 6) and Kunga (house 3, upper storey and adjoining building) in spring 1993. Kunga has not yet moved to the new house. Samdruk already started to demolish his old house in May to salvage building materials for the new one. Yet the Tsangang, that triangular-shaped repository of juniper twigs on top of the roof, remains, fairly well supported. Only after the new house has acquired full performance as a home he will move this protective element that wards off evil spirits. At the same time, his neighbour Mingmar (house

5) demolished his house : The joists and beams were removed for reuse, only the bleak mud walls remained. The ground floor was rearranged to serve as a store for hay and straw. Mingmar's neighbour (house 4) in turn joined in demolishing parts of her house that had already been in ruins for many years. The way the timber is recovered from existing houses might throw a light on the availability and costliness of timber in general. As a commodity it is used over and over again : A joist will be reused as a joist and a beam as a beam. There is no reason to believe, that the general practice differed a century of two ago.

With these considerations in mind the dendrochronological evidence at hand for Kagbeni has to be treated with due reservations. Perhaps the best examples for reuse of timber are the board on the fourth floor levels of the castle (sample 60, dated 1568) used in a context of late 18th century construction and the board below the Lhakhang of Pema Drolkar's house (sample 33) dated 1775, but reused in the context of an early 20th century addition to the existing house. There is another case of reuse that remained misleading until recently. The core from a beam in Ringzin's house (sample 27) is dated 1848 although Ringzin insisted (interviews in April 1992 and June 1993) that he built his house some forty years ago at the time he moved from his father's house to build his own residence. A closer look at his house revealed that the lifts of the mud wall measure 22 cm like the walls of all the other houses that were constructed east of Pema Drolkar's house after 1930. The small lifts contrast with those of Pema Drolkar's house and Karma Tsogle's houses which were constructed around the middle of the 19th century and measure 56 and 46 cm respectively.

The lifts of the old houses which form an arc around the castle towards the west again differ considerably from those of the 19th century. At Samdruk's house (No. 6) the lifts measure 90 cm, at Mingmar's house (No. 5) 56 and at Waya Tshering's house (No. 2), the one that is said to have once challenged the height of the castle, measurements come up to 98 and 108 cm. Generally it can be said, that the house of the 17th century tended to have five storeys, demanding more solid walls, while by the middle of the 19th century only three-storeyed houses were being built, demanding less solid walls. By the middle of the 20th century houses used to have only two storeys, walls did not have to bear a substantial load, subsequently the lifts of the mud walls were reduced.

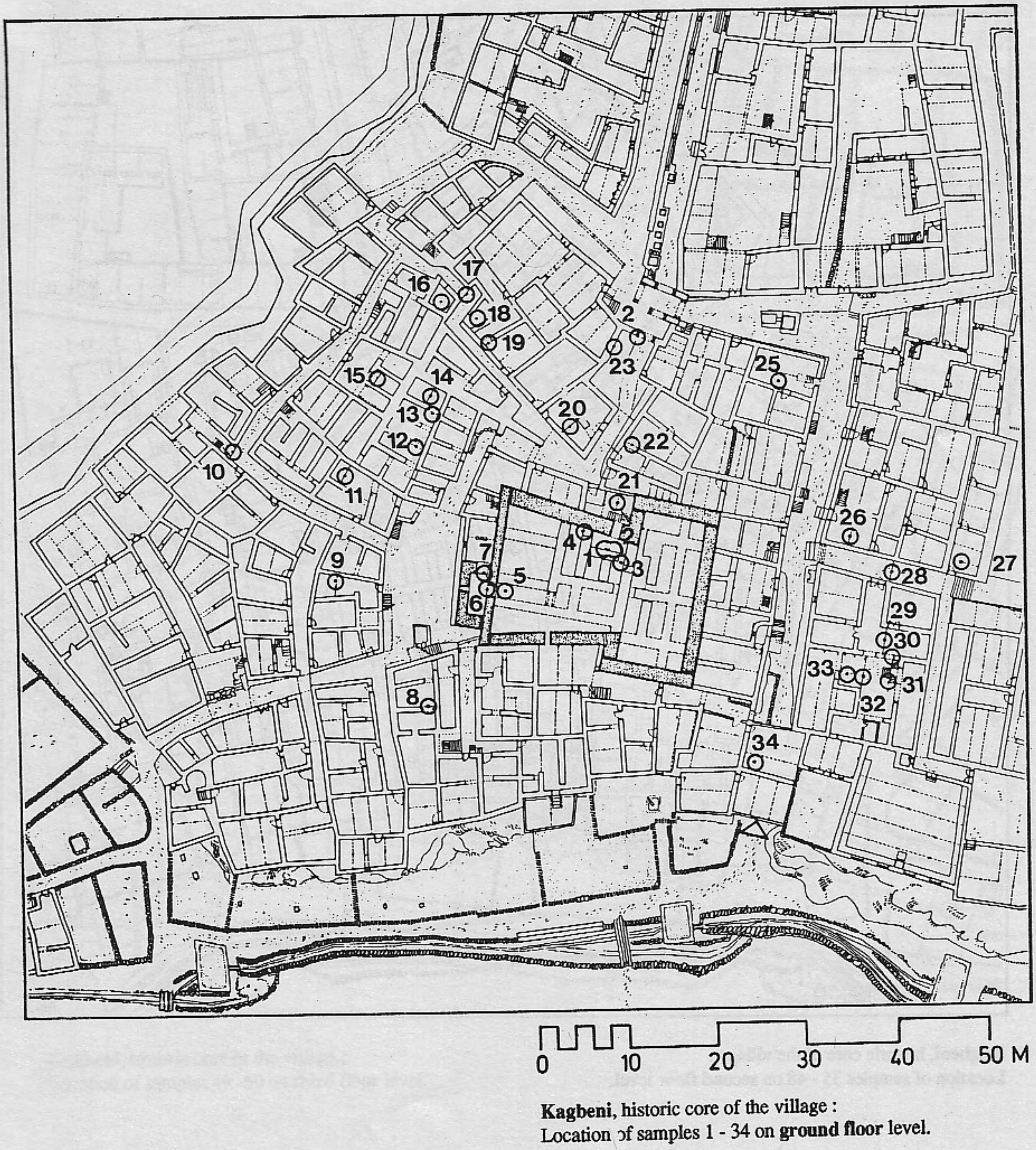
From this discussion it becomes evident that data provided by dendrochronological findings have to be correlated with evidence from structural analysis in order to come to a reliable conclusion about the history of a house or the development of a village.

			Range
CASTLE			
First Floor :			
Northern Entrance	:		
Sample 1 : Core of a long pillar	:	**1586**	
Sample 2 : Core of a long pillar	:	**1596**	**1586 - 1622**
Sample 3 : Core of a ceiling joist	:	**1581**	
Sample 4 : Core of a lintel	:	**1622**	
Western Entrance:			
Sample 5 : Core of a pillar	:	**1572**	
Sample 6 : Core of a lintel	:	**1600**	**1572 - 1683**
Sample 7 : Core of a lintel	:	**1683**	
Second Floor :			
Sample 35 : Stump of a ceiling joist	:	**1568**	
Sample 36 : Core of a lintel	:	**1622**	
Sample 37 : Stump of a ceiling joist	:	**1568**	**1568 - 1622**
Sample 38 : Cut end of a ceiling joist	:	**1568**	
Sample 39 : Fragment of a board from shuttering	:	**1568**	
Third Floor :			
Sample 49 : Core of a lintel	:	**1568**	
Sample 50 : Core of a ceiling joist	:	**1596**	
Sample 51 : Core of a pillar	:	**1572**	**1568 - 1621**
Sample 52 : Core of a pillar	:	**1621**	
Sample 53 : Core of a pillar	:	**1621**	
Fourth Floor :			
Sample 57 : Core of a window lintel	:	**1665**	
Sample 58 : Cut end of a wall crown support	:	**1779**	**1665 - 1779**
Sample 59 : Cut end of a window lintel	:	**1779**	**(1568 = secondary use)**
Sample 60 : Board from shuttering	:	**1568**	
NORTHERN GATE			
Sample 24 : Core of a pillar		**1770**	
SOUTHERN GATE			
Sample 34 : Core of a beam		**1885**	
CHÖDE (MONASTERY)			
Sample 61 : Core of a sill		**1860**	
Sample 62 : Core of a sill		**1860**	

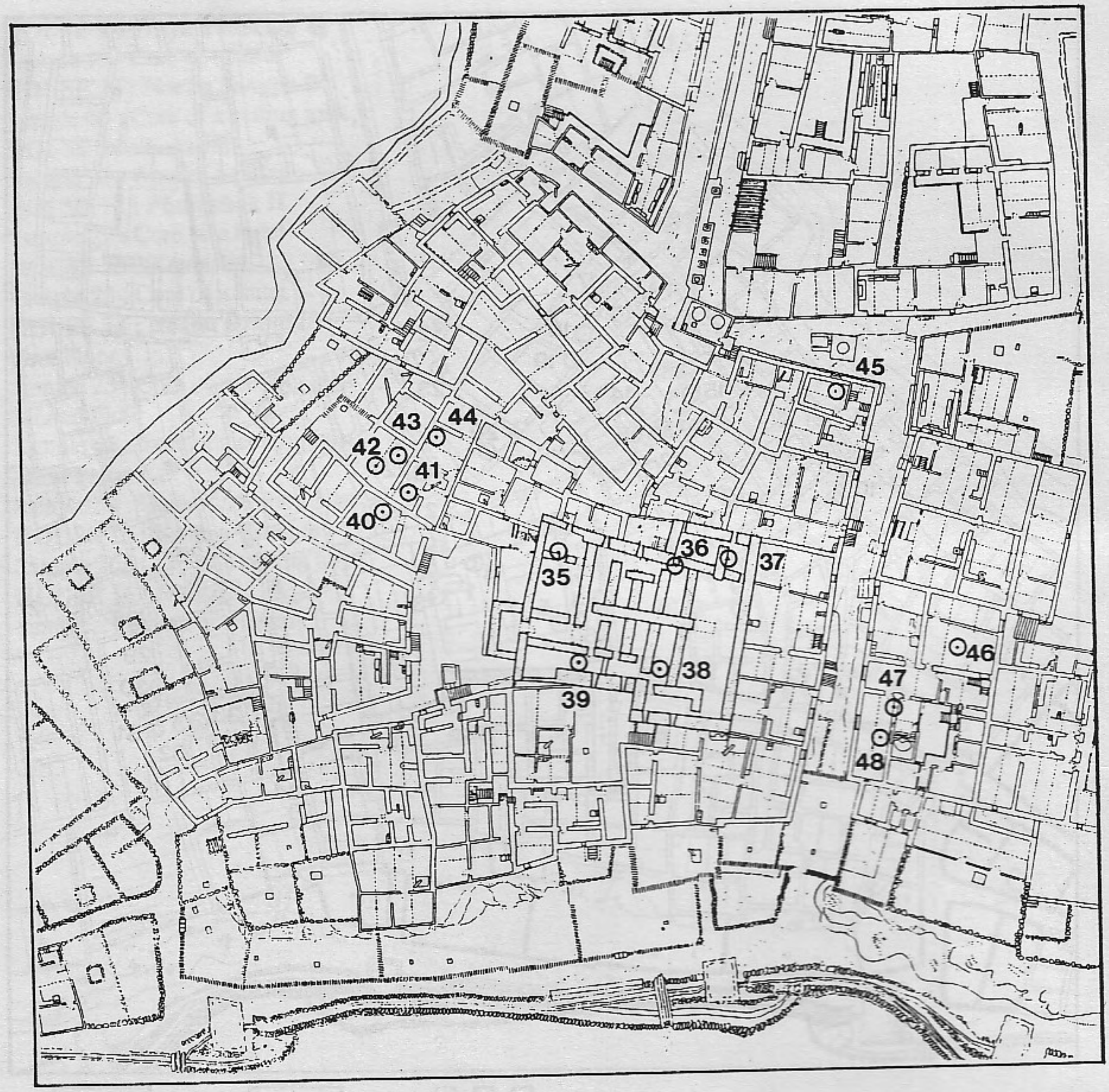
Kagbeni Castle : Dendrochronological analysis of 21 samples with dates ranging from 1568 to 1779 AD (based on samples secured in 1992 and 1993)

HOUSE No. OWNER	DATE
HOUSE 1 : Pema Drolkar	
First Floor	
Sample 28 : Core of a beam above the lane	**1856**
Sample 29 : Core of a beam in the stable	**1848**
Sample 30 : Core of a pillar in the courtyard	**1887**
Sample 31 : Cut end of a beam in the courtyard	**1886**
Sample 32 : Cut end of a beam in the courtyard	**1856**
Sample 33 : Ceiling board	**1775**
Second Floor	
Sample 46 : Core of a pillar	**1858**
Sample 47 : Cut end of a beam above the Lhakhang	**1886**
Sample 48 : Ceiling board above the Simkhang	**1859**
HOUSE 2 : Waya Tshering A	
Sample 8 : Core of a lintel	**1680**
HOUSE 3 : Norbu Sangpo A	
Sample 9 : Core of a beam	**1770**
HOUSE 4 : To Tshang	
Sample 10 : Core of a lintel above the entrance	**1814**
HOUSE 5 : Mingmar A	
First Floor	
Sample 11 : Core of a beam	**1770**
Second Floor	
Sample 40 : Core of a ceiling joist	**1770**
Third Floor	
Sample 54 : Core of a pillar	**1887**
Sample 55 : Core of a pillar	**1856**
HOUSE 6 : Samdruk	
First Floor	
Sample 12 : Core of the middle lintel	**1572**
Sample 13 : Core of the front lintel	**1572**
Sample 14 : Core of a ceiling joist	**1572**
Second Floor	
Sample 41 : Core of a ceiling joist	**1771**
Sample 42 : Core of a pillar	**1771**
Sample 43 : Core of a ceiling joist	**1771**
Sample 44 : Core of a ceiling joist	**1771**
HOUSE 7 : Phuntshok I	
Sample 15 : Core of a ceiling joist	**1630**
HOUSE 8 : Pema Ongdi	
Sample 16 : Core of a beam	**1886**
Sample 17 : Core of a beam	**1605**
Sample 18 : Core of a beam	**1605**

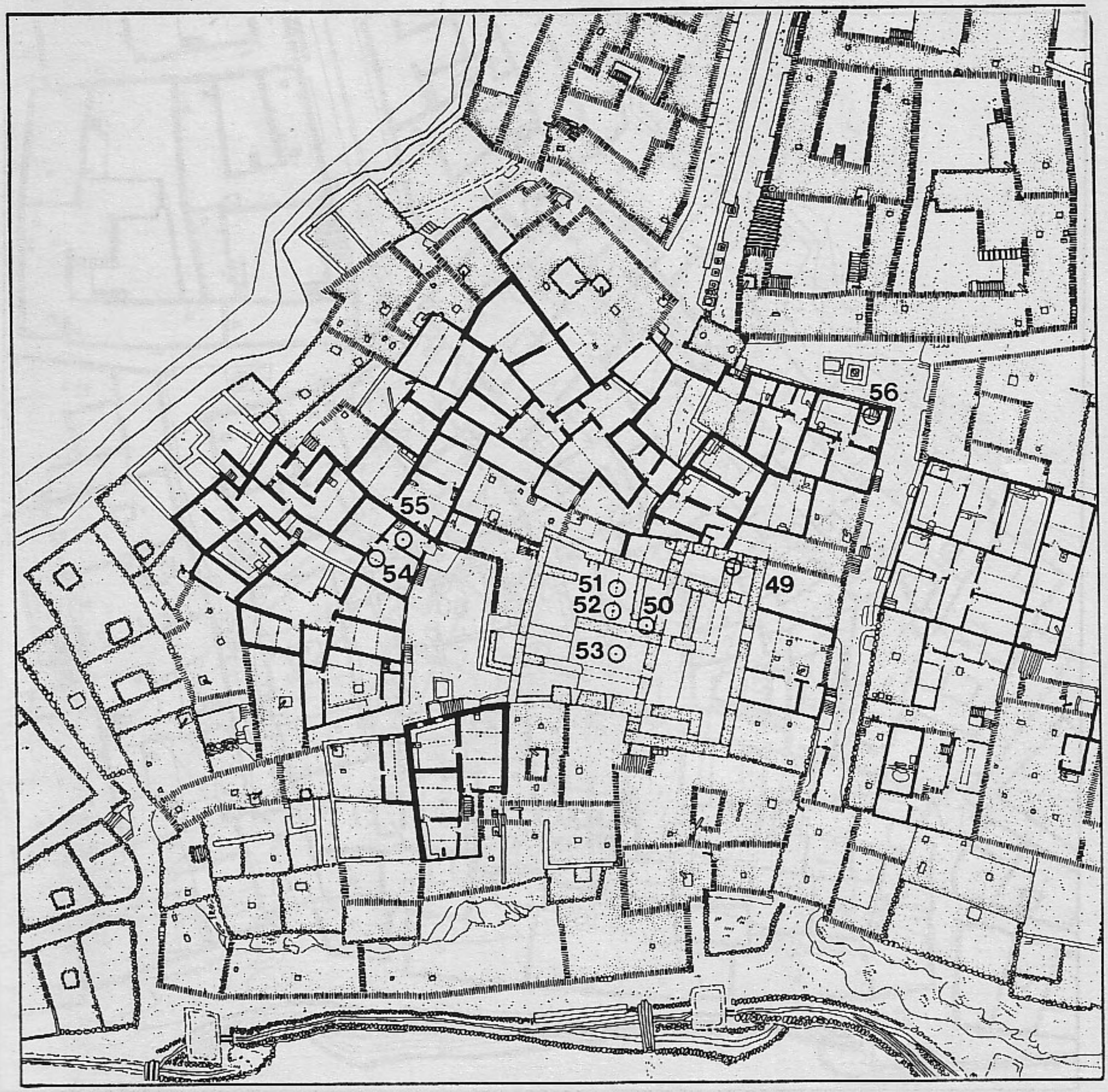
HOUSE 9 : Waya Tshering B	
Sample 19 : Core of a lintel	**1855**
HOUSE 10 : Norbu Sangpo B	
Sample 20 : Core of a ceiling joist	**1730**
HOUSE 11 : Laksom	
Sample 21 : Core of a pillar	**1920**
HOUSE 12 : Phuntshok II	
Sample 22 : Core of a lintel	**1847**
HOUSE 13 : Kemesha	
Sample 23 : Core of a lintel	**1770**
HOUSE 14 : Norbu Drandul	
First Floor	
Sample 25 : Core of a ceiling joist	**1827**
Second Floor	
Sample 45 : Core of a ceiling joist	**1858**
Third Floor	
Sample 56 : Core of a ceiling joist	**1963**
HOUSE 15 : Karma Tshogle	
Sample 26 : Core of a ceiling joist	**1853**
HOUSE 16 : Ringzin	
Sample 27 : Core of a beam	**1848**



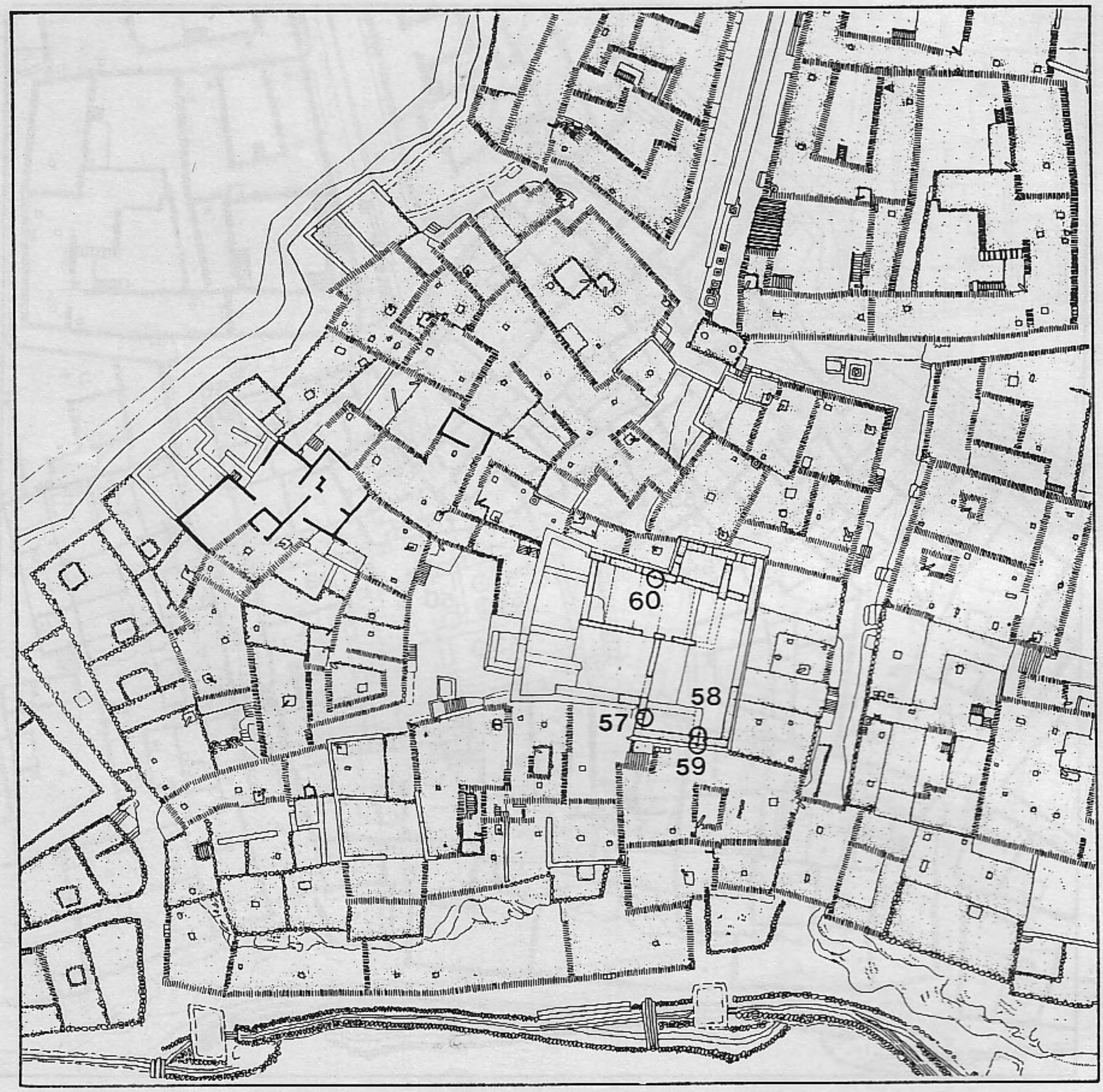
Kagbeni, historic core of the village :
Location of samples 1 - 34 on **ground floor** level.



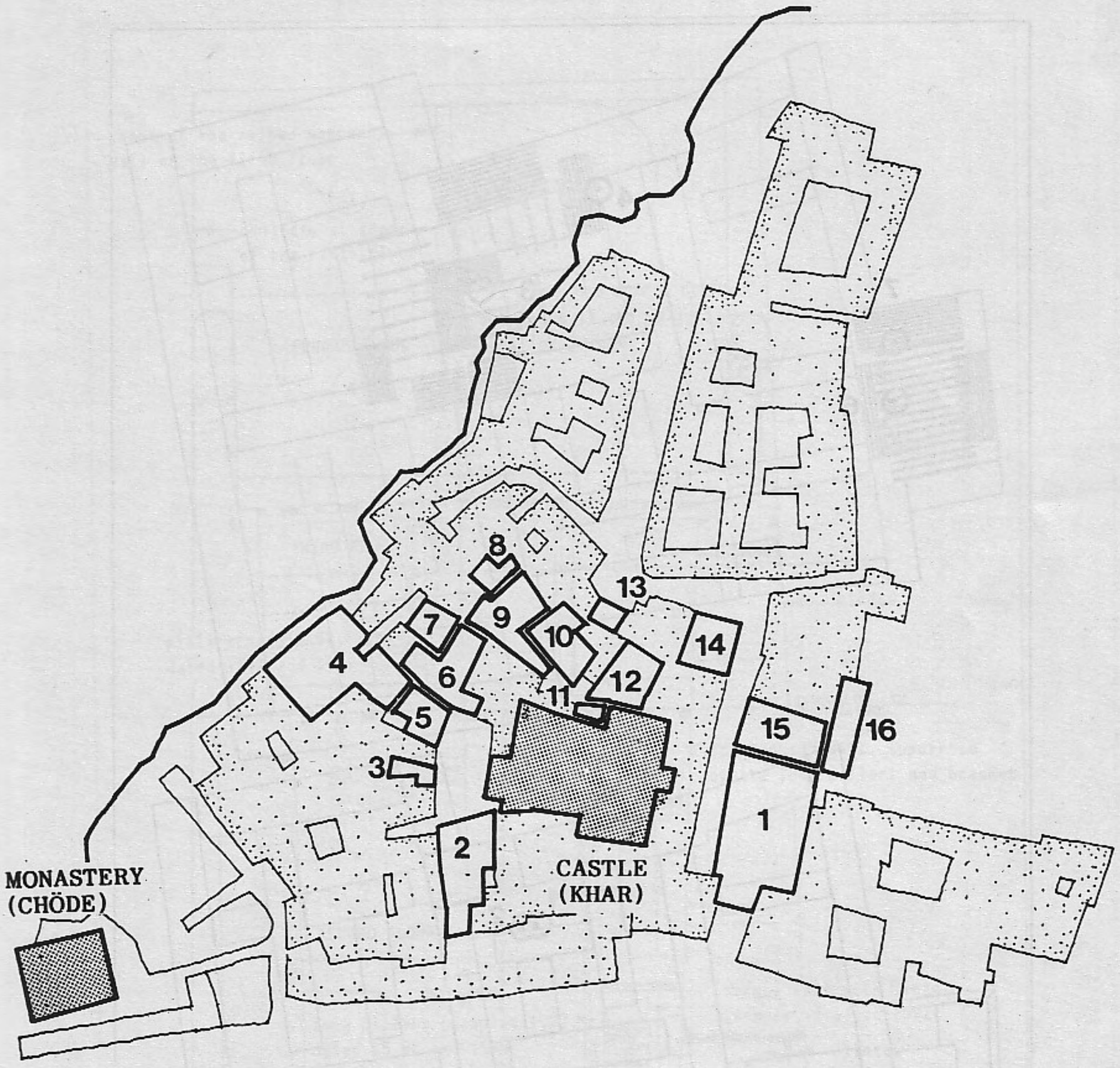
Kagbeni, historic core of the village :
Location of samples 35 - 48 on **second floor** level.



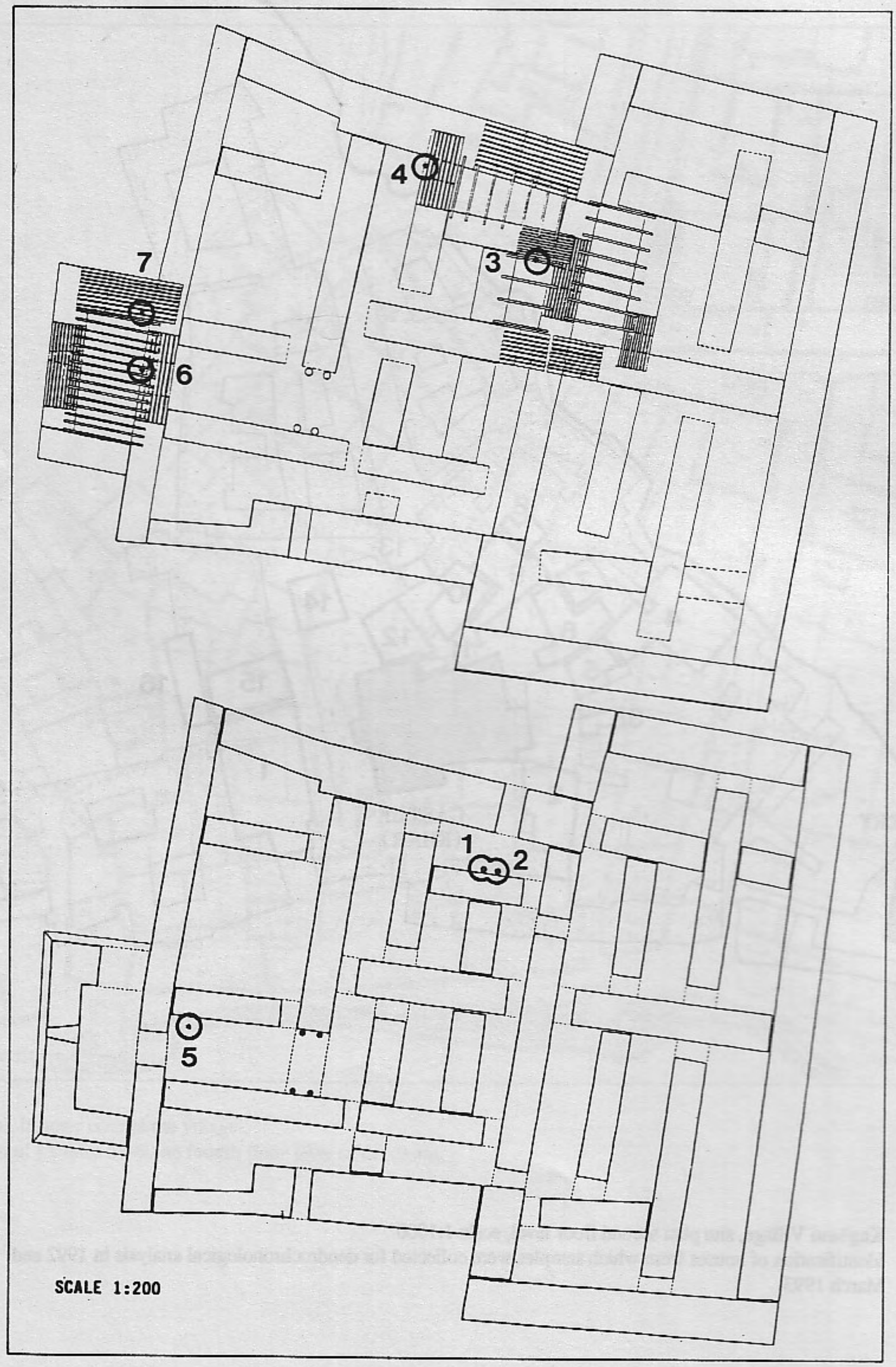
Kagbeni, historic core of the village :
Location of samples 49 -50 on **third floor** level.



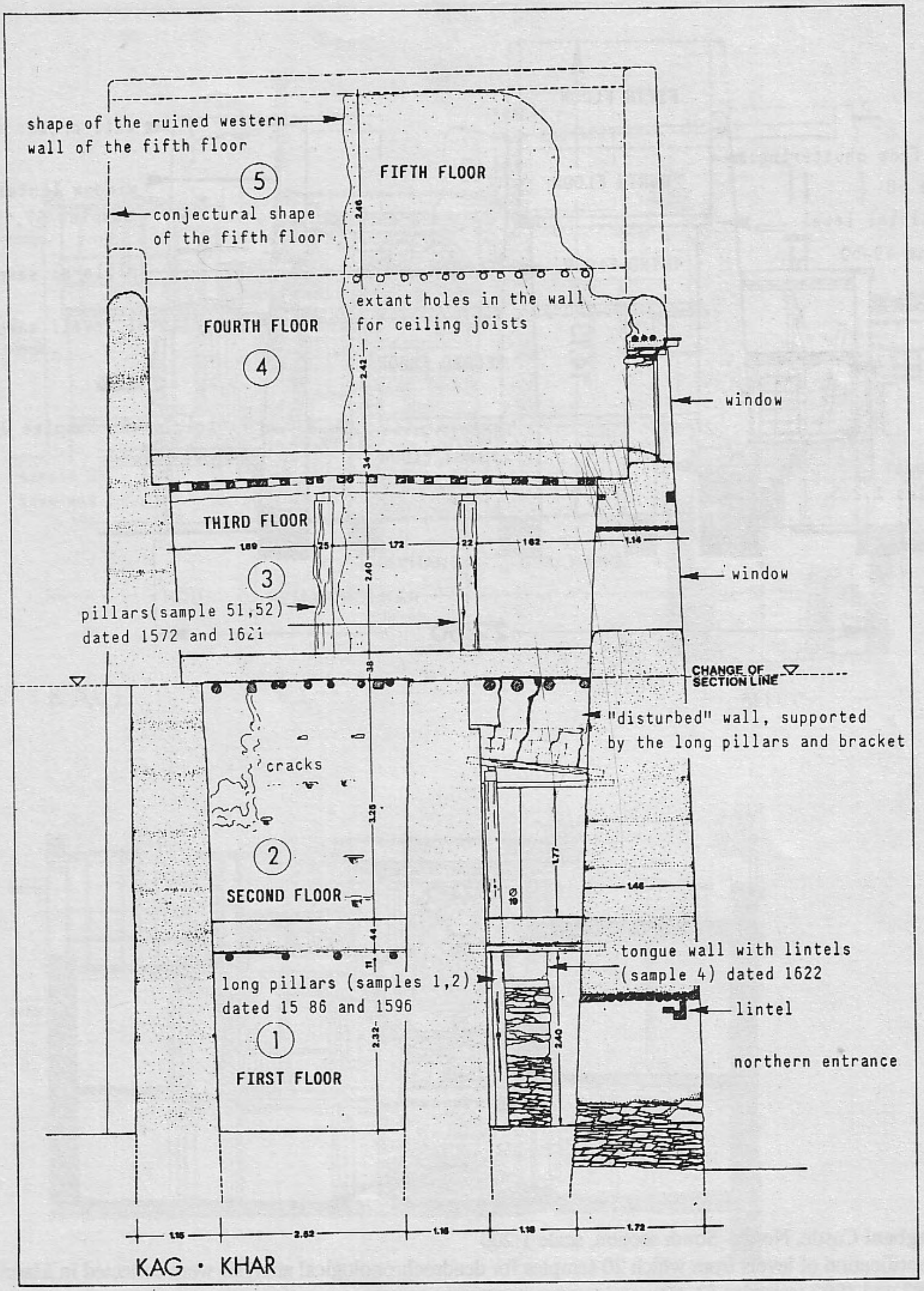
Kagbeni, historic core of the village :
Location of samples 57-60 on **fourth floor** level of the castle.



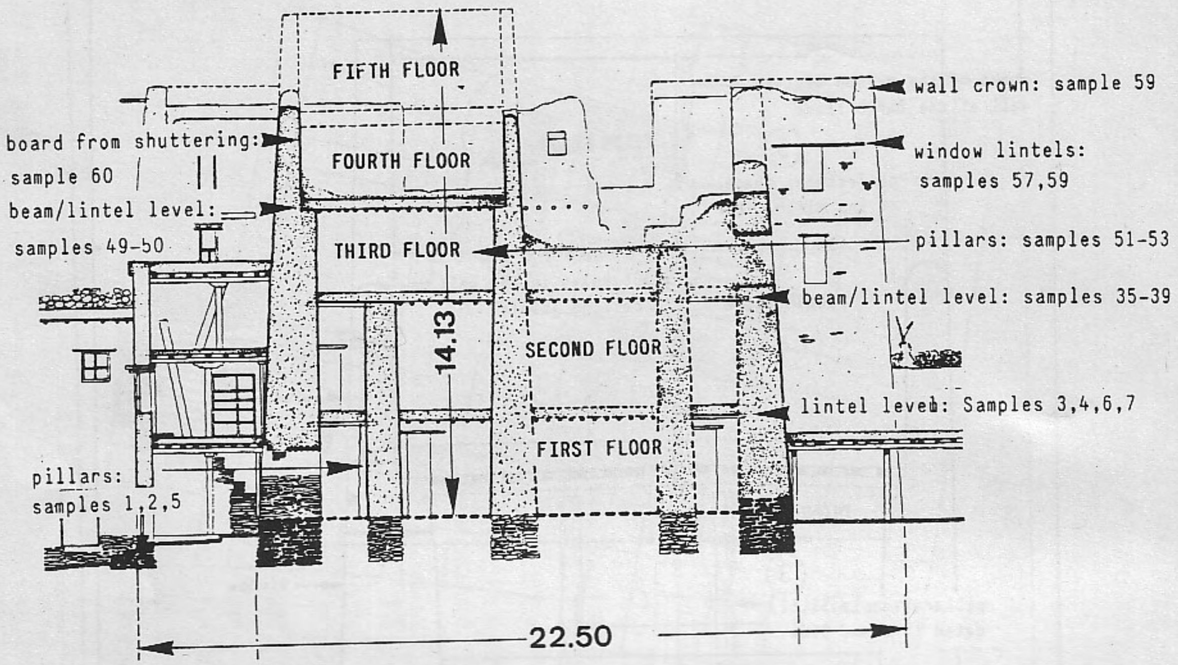
Kagbeni Village, site plan second floor level, scale 1:1000
Identification of houses from which samples were collected for dendrochronological analysis in 1992 and March 1993



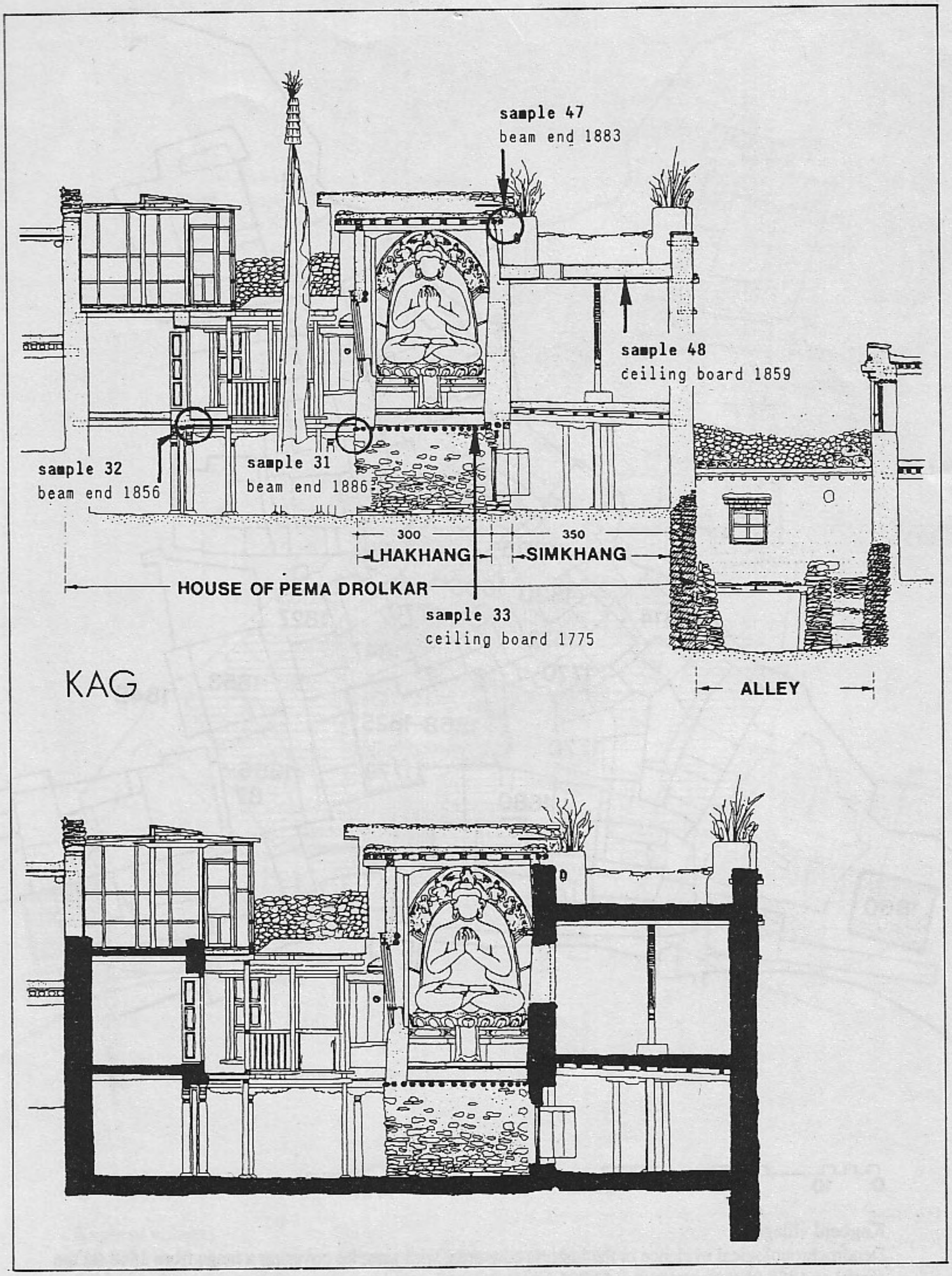
Kagbeni Castle, ground floor level - conjectural plan (below) and ceiling level (above) Identification of samples 1 to 7



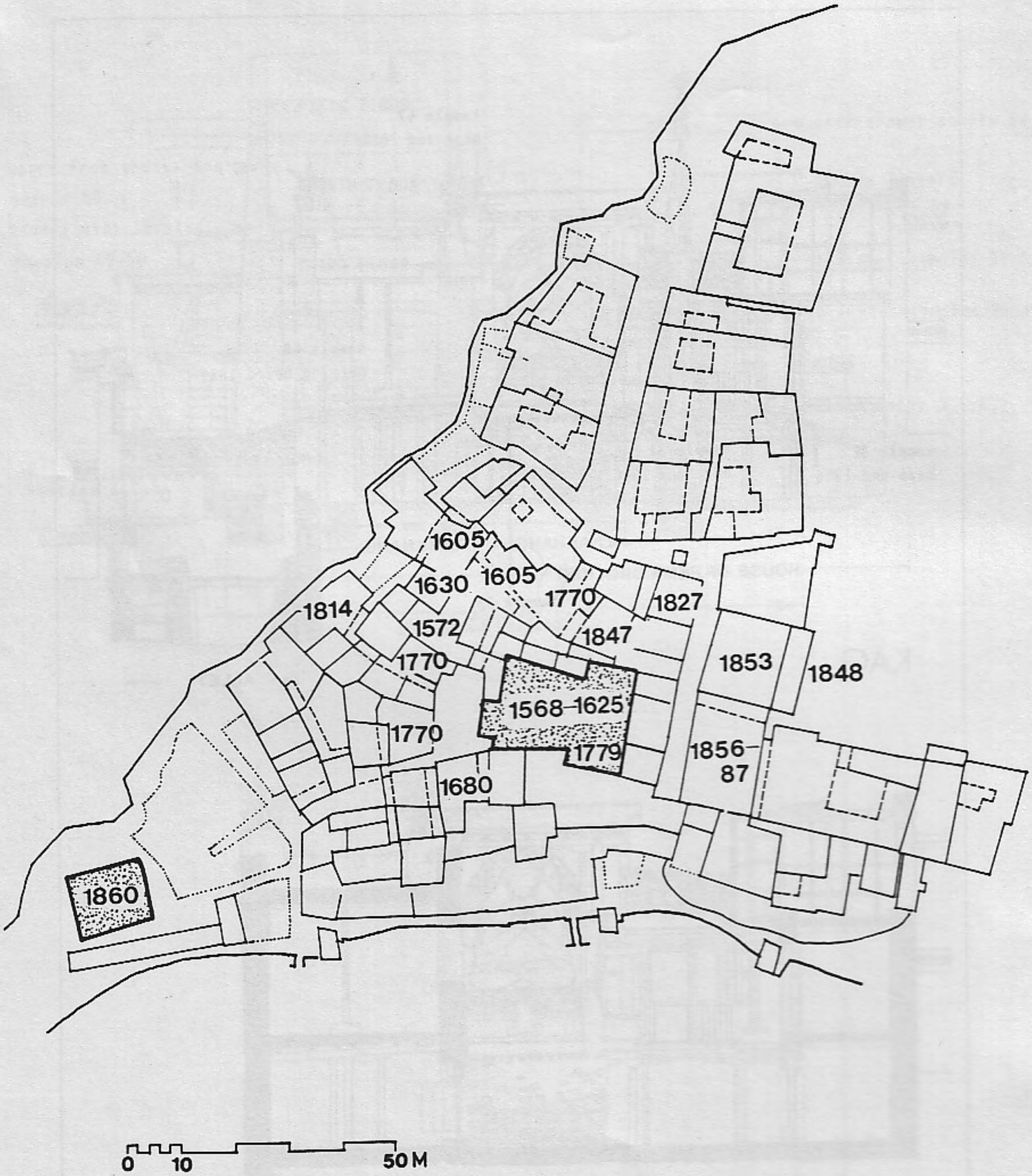
Kagbeni Castle (Khar), detailed section of the area of the northern entrance.
Identification of samples 1, 2, 5 and 6 of "disturbed" sections of the building that document changes in the building process



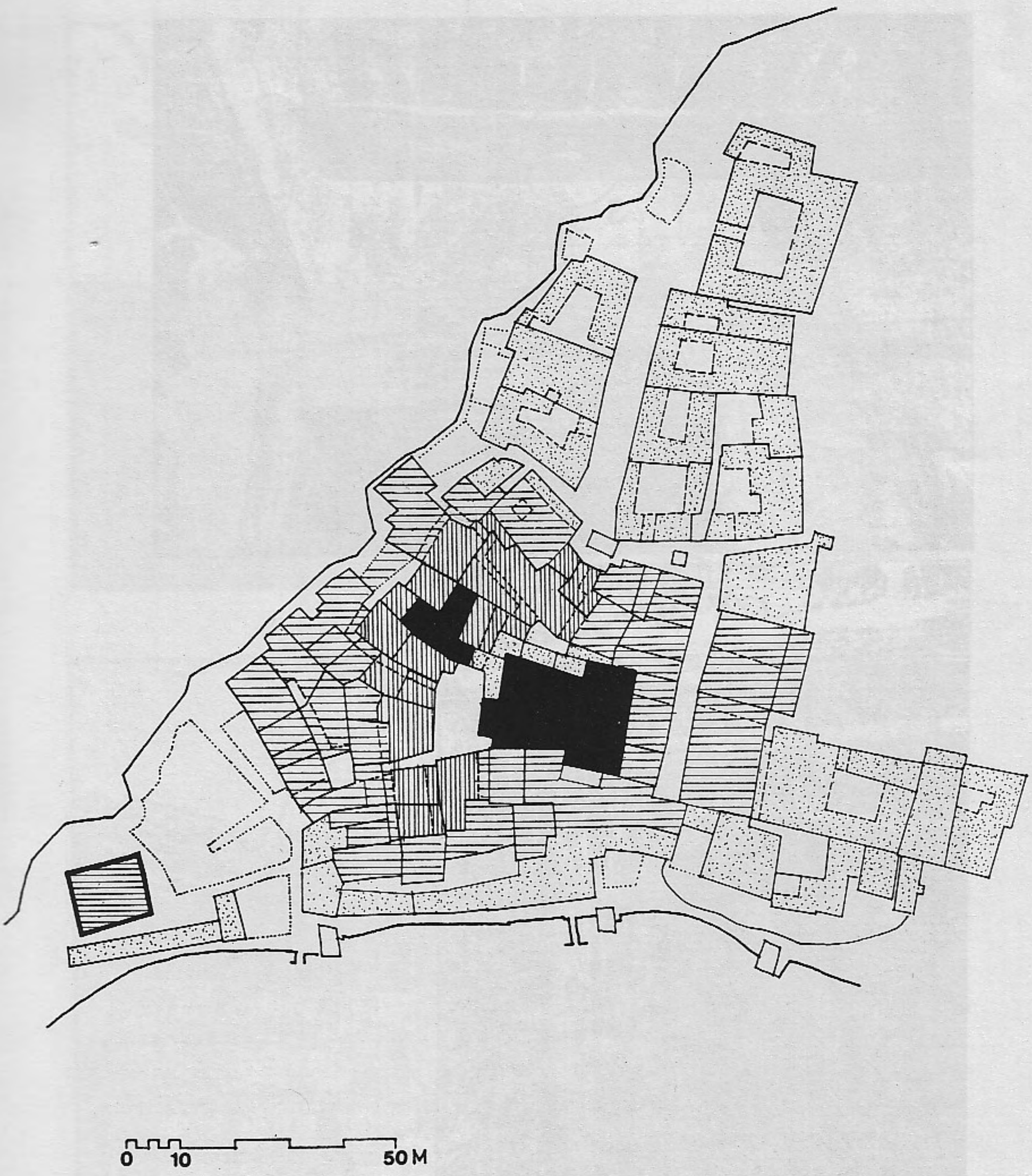
Kagbeni Castle, North - South section, scale 1:200
Identification of levels from which 20 samples for dendrochronological analysis were collected in March 1993 and 1992 (samples 53, 60)



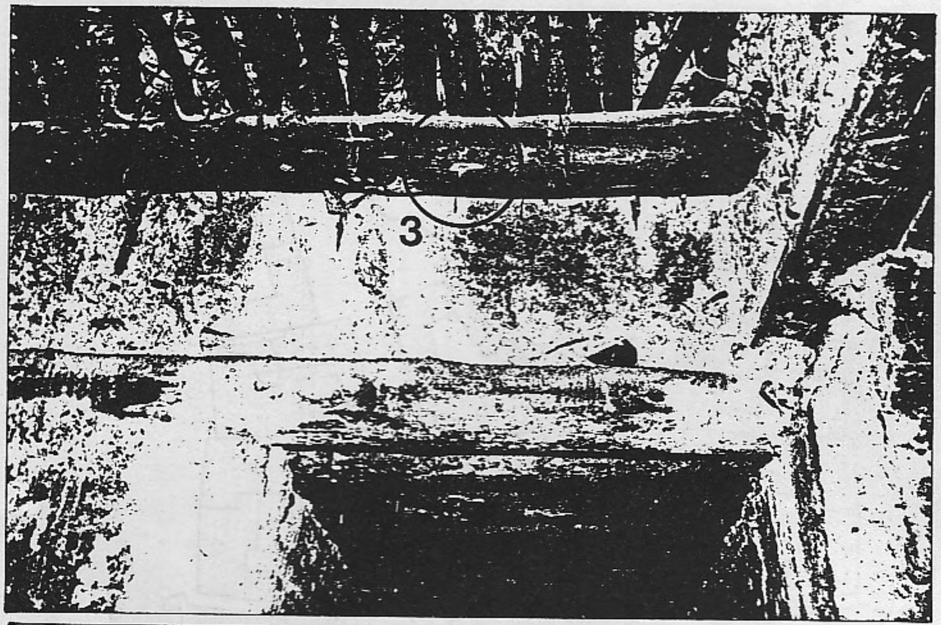
Kagbeni, House of Pema Drolkar, East - West sections through Simkhang and courtyard.
Identification of samples 31, 32, 33, 47, 48 (above) and conjectural section below after the first phase of construction around 1860 AD with Simkhang (right), large courtyard and stables (left).

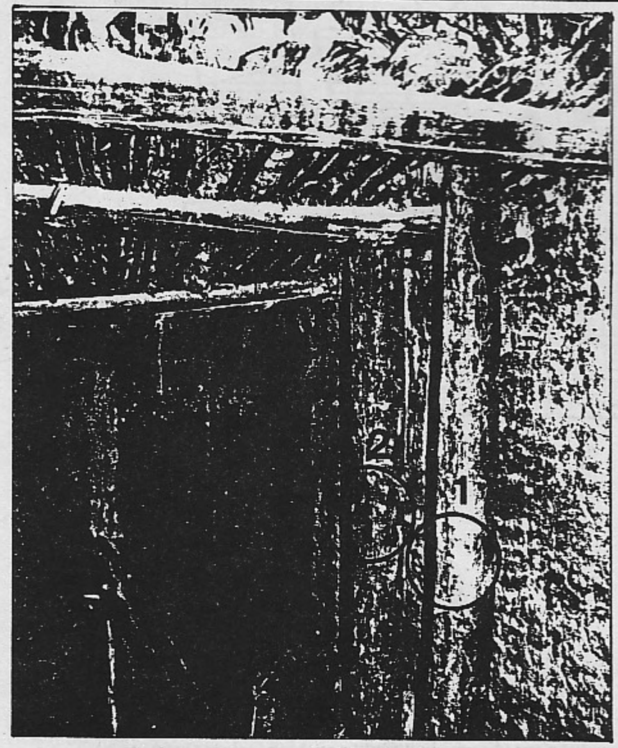


Kagbeni village :
Dendrochronological evidence in the historic core area, with samples covering a range from 1568 (at the castle) to 1860 (the monastery) and 1887 (repairs).

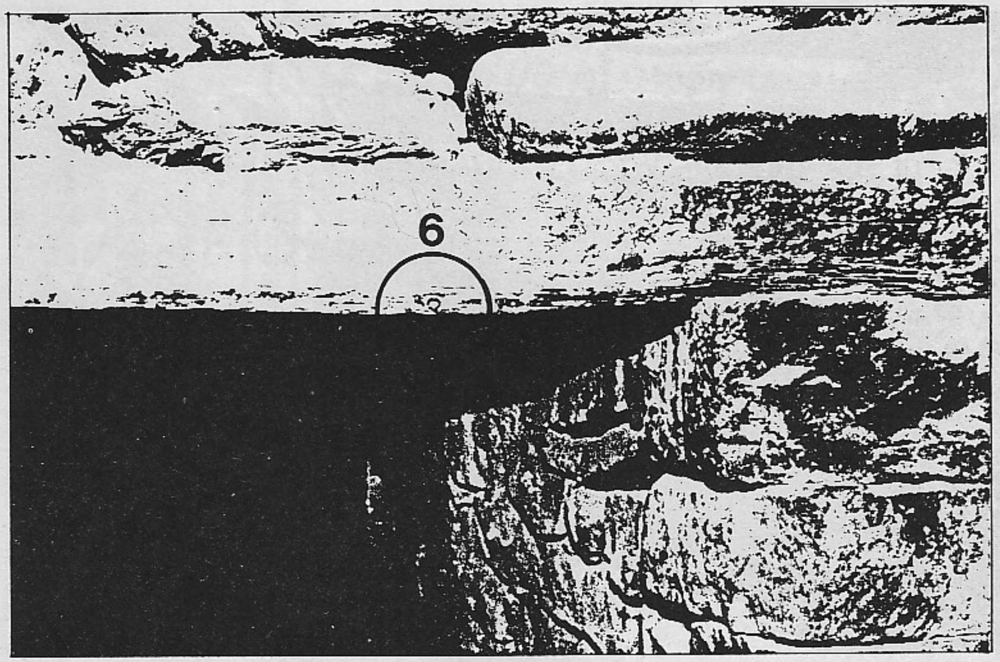


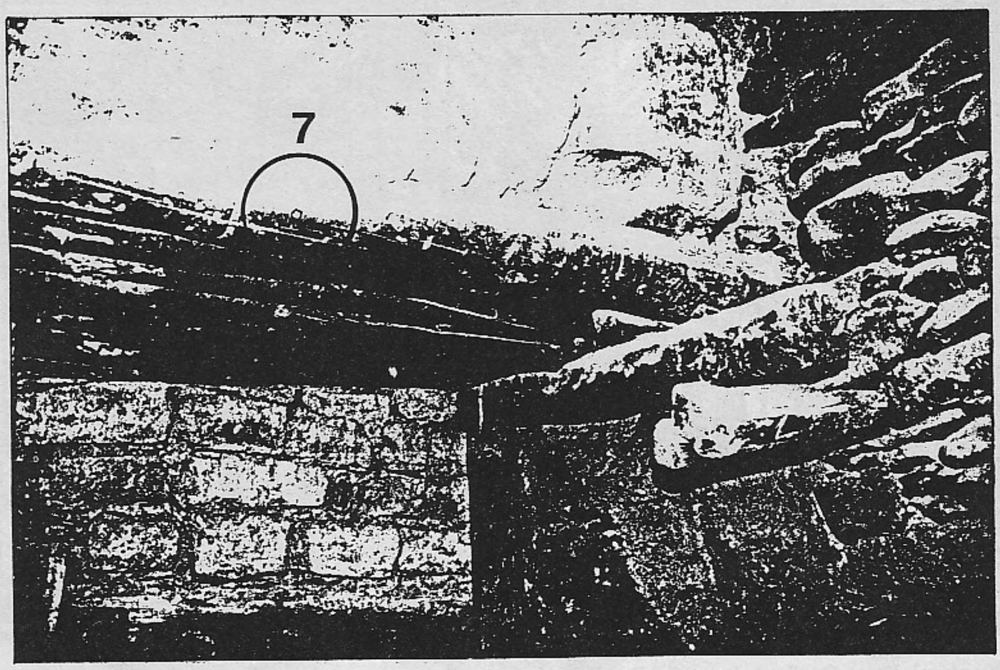
Kagbeni village :
Conjectural development of the settlement with four phases identified :
1 (black) : Beginning of the castle and house Somduk, 1568 - 1600; 2 (vertical lines) : Extension of the castle, construction of about 14 houses west of it, 1600 - 1800;
3 (horizontal lines) : Construction of the monastery and about 40 houses surrounding the castle and the 17th century settlement, 1800 - 1860; 4 (dots) : Construction of about 20 houses in a new fashion around courtyards, 1920 - 1993.



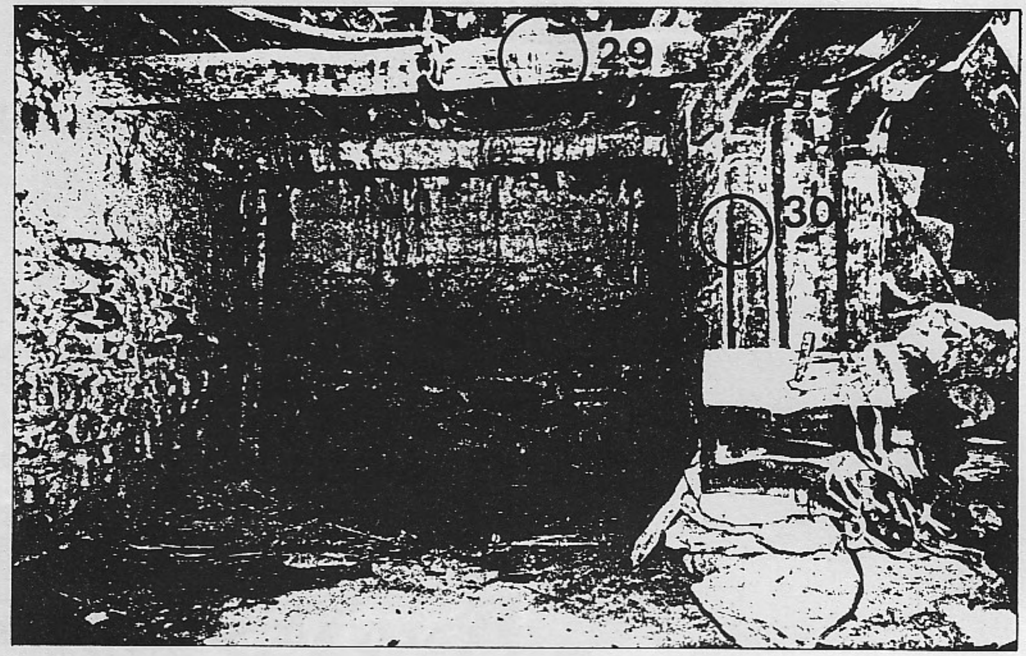


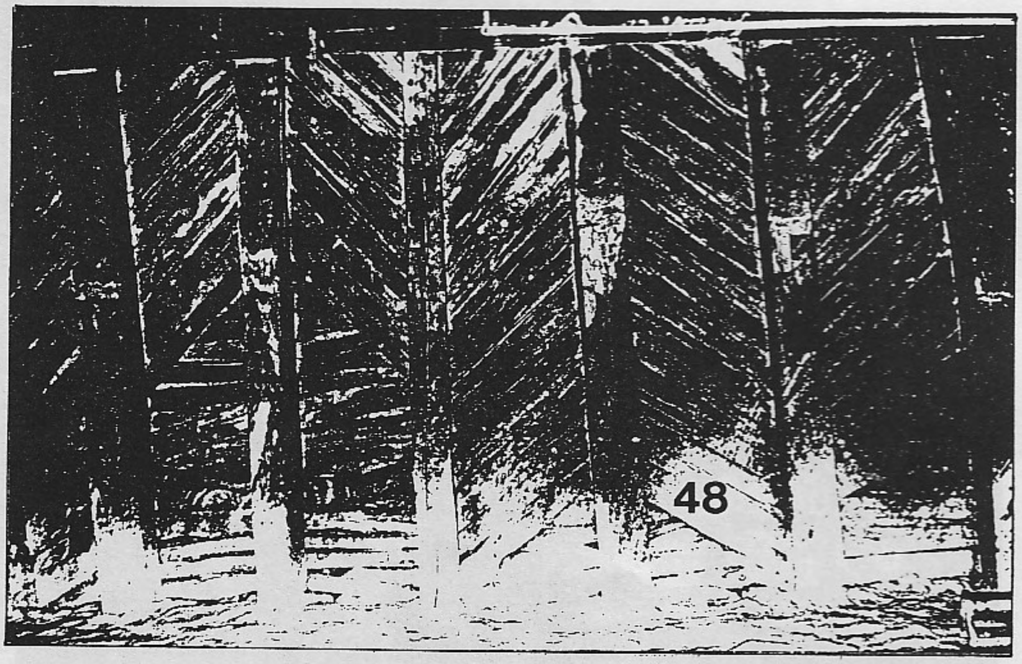
Kagbeni Castle, ground floor level :
Samples 1 and 2 (1993) : Core of two columns extending over two floors to support lintels of the upper level, dated 1586 and 1595.
Sample 3 (1993) : Core of a ceiling joist, dated 1581.



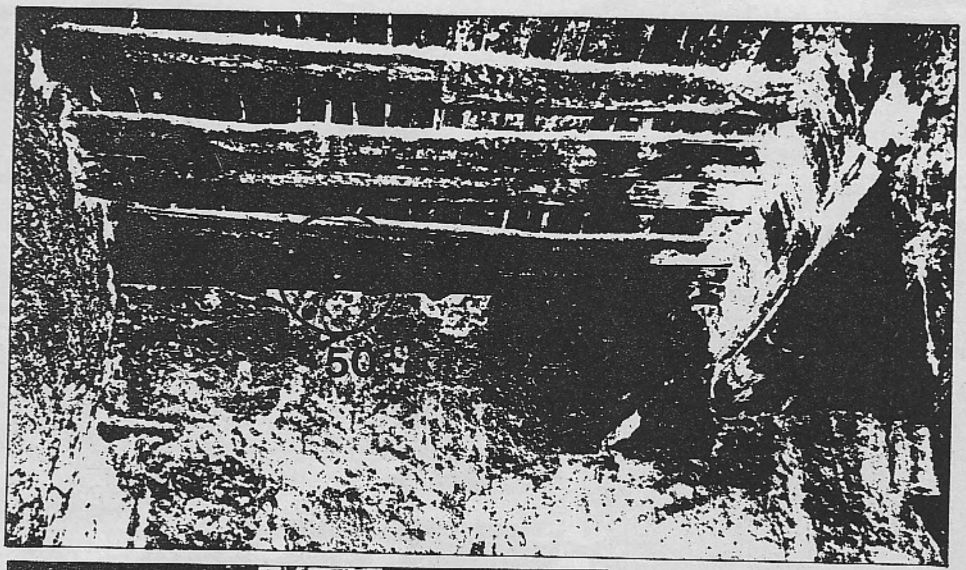


Kagbeni Castle, ground floor level :
Sample 6 (1993) : Core of the foremost lintel of the western entrance, dated 1600.
Sample 7 (1993) : Core of the innermost lintel above the addition to the western entrance, dated 1683.

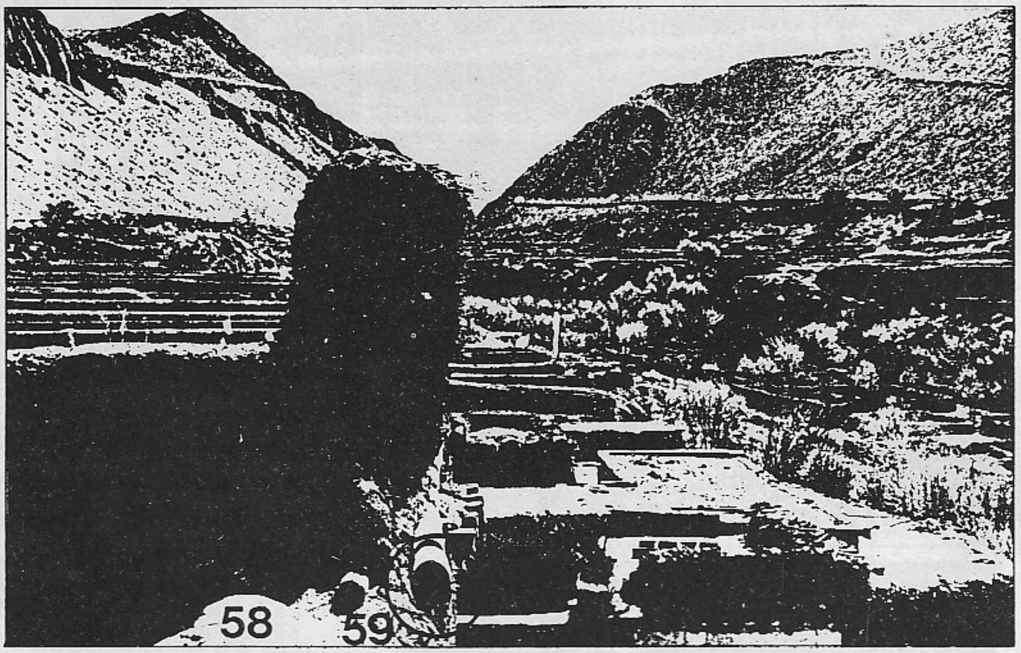


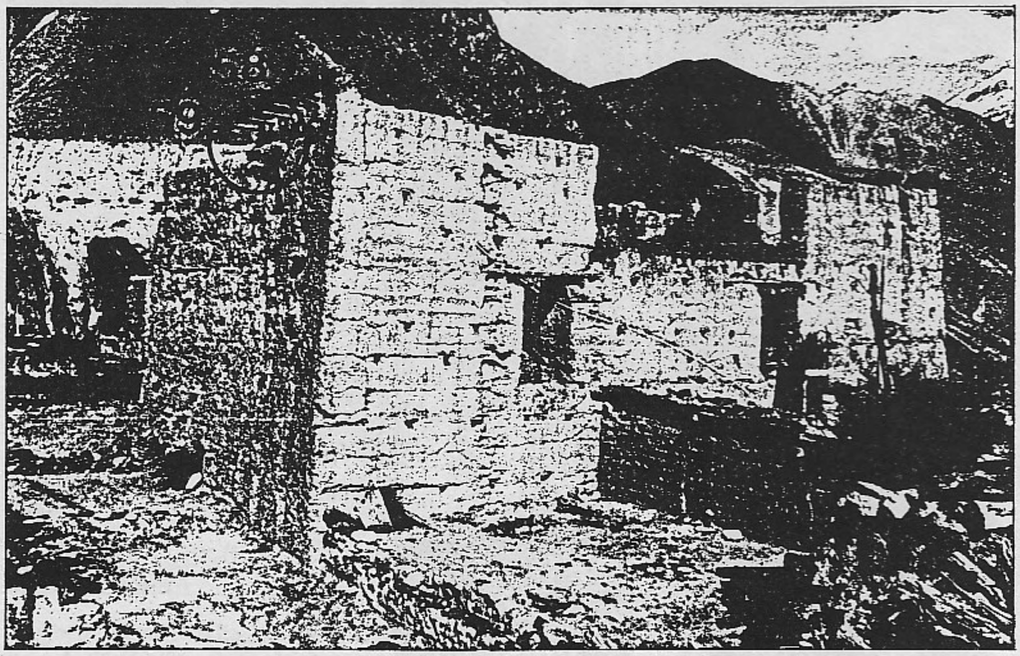


Kagbeni, Pema Drolkar's house (called Red House) :
Sample 29 (1993) : Core of a tie beam at ground floor level, dated 1843 (+/- 10 years)
Sample 30 (1992) : Core of a column at ground floor level, dated 1887.
Sample 48 (1992) : Board of the ceiling above the ritual chamber of the second floor level, dated 1859.



Kagbeni Castle, third floor level :
Sample 50 (1993) : Core of a ceiling joist, dated 1596.
Sample 51 (1992) : Core of a column supporting a tie beam, dated 1572.





Kagbeni Castle, fourth level (top floor) :
Sample 58 (1993) : Cut end of a secondary lintel, dated 1779.
Sample 59 (1993) : Cut end of a horizontal raft above a window lintel, dated 1779.

Despite it having been heavily destroyed by erosion, so that only small portions of the cave chambers had been preserved, the work in this cave system proved to be quite successful. We were nevertheless able to document some new types of features - for example, passage and tower described above - and other finds which shed more light on the different functions of the cave systems.

Furthermore, evidence was found of a ritual use in the remains of a cave chamber, where we uncovered a large hearth. In its fire-pit we found, apart from charcoal and animal bones, several metal objects and three wooden phurbas (Fig.16 below). Special finds were fragments of paper with Tibetan script and drawings. In the adjacent floor we excavated fragments of twelve small images made of unburnt clay depicting horses, measuring 3-5 cm (Fig. 16 above). The tibetologists D. Schuh and C. Ramble think that all these objects could be the remains of a fire ceremony carried out in this cave. As for the dating of this event, we received a radiocarbon date from the charcoal in the fire pit (AD 1008 ± 24 = calAD 1012 - 1028).[14] Thus, our finds belong to the oldest sources of Tibetan script in this region.

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First results of our 1992 fieldwork

This year's field campaign has yielded first answers to our questions concerning the different stages of utilization of the cave systems and their position in their environment:

(a) They were used mainly as settlements where everyday life took place. Radiocarbon dates and a number of finds suggest that during the earliest occupation period there were connections to the funeral caves in the Thakkhola.

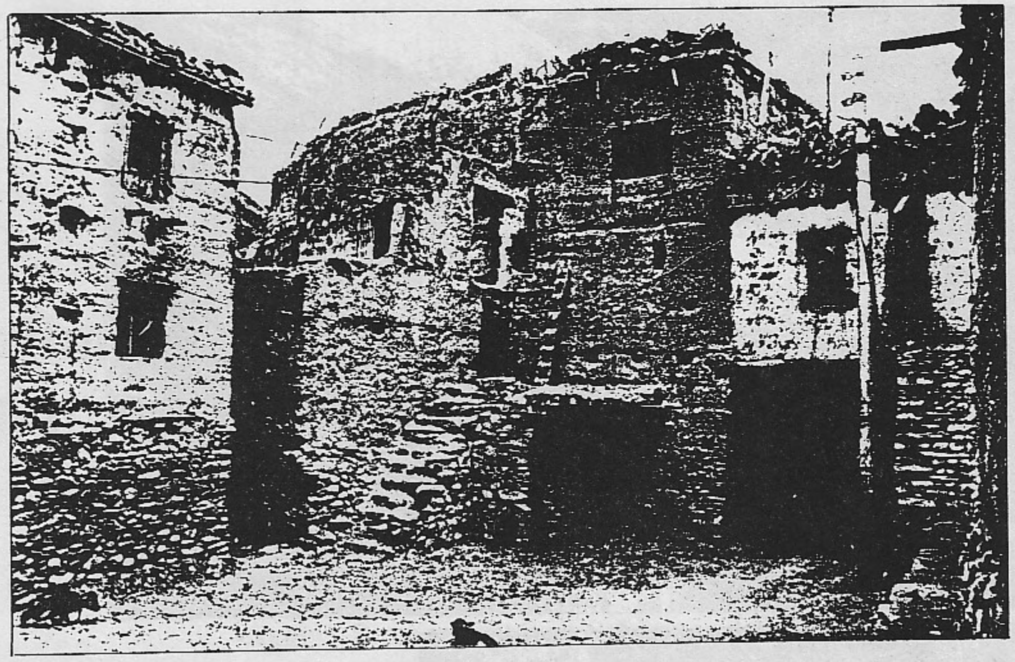
(b) The caves provided shelter during attacks by enemies.

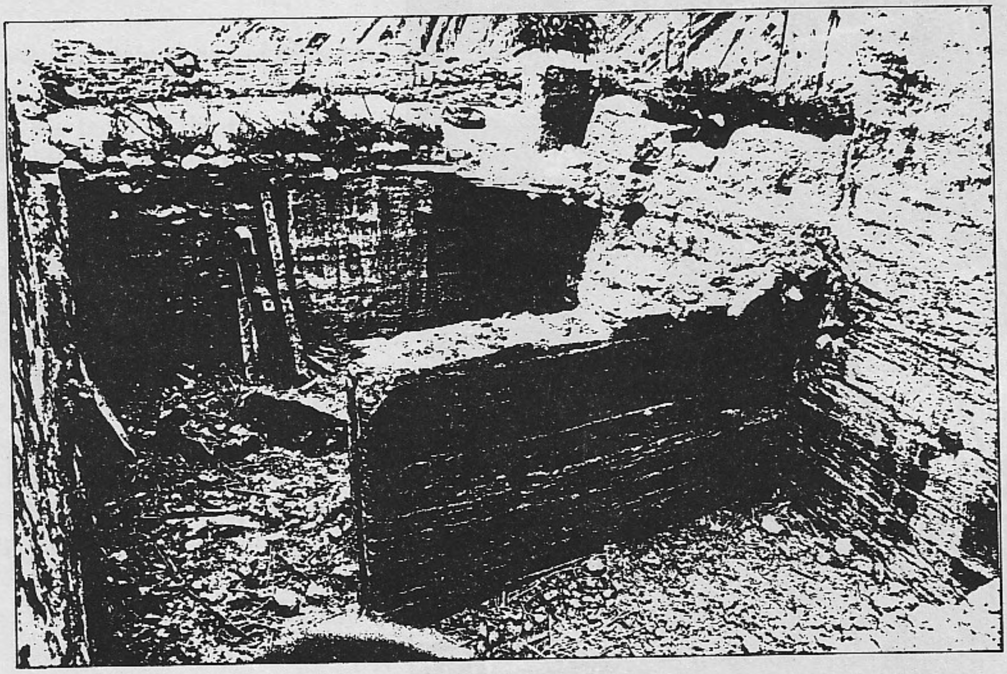
(c) In the last stage they probably acted as the quarters of hermits who lived and worked there.

The radiocarbon dates suggest a long period of occupation from about calBC 800 to calAD 1500, presumably with alternating periods of settlement and abandonment. The adjacent ancient settlement and village sites proved to be partly contemporary and related to the cave systems; they furnished dates from about calBC 350 up to calAD 1650.

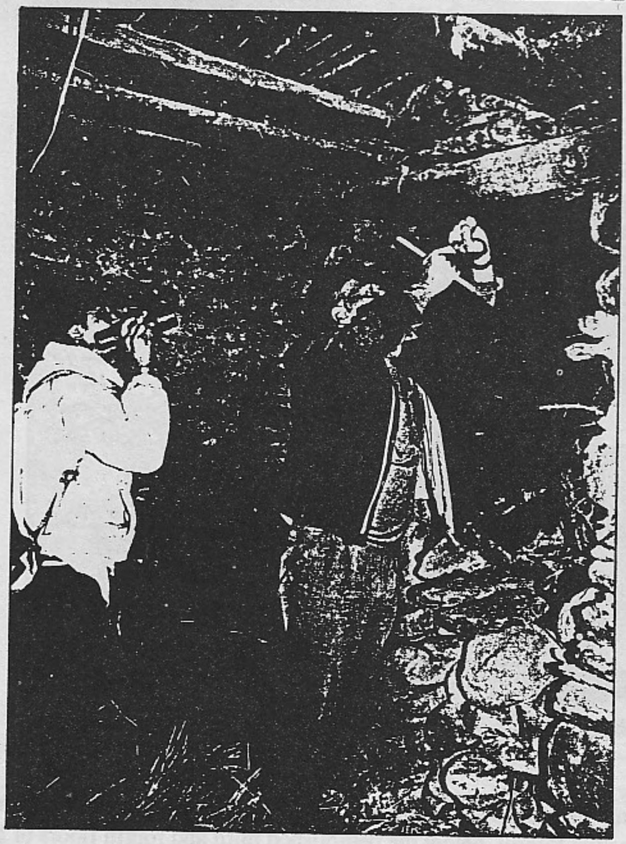
Nowadays, the cave systems in Mustang are archaeological monuments representing mere relicts of the former settlements once furnished with elaborate wooden galleries, staircases, and porches.[15] The galleries and buildings in front of the rock faces collapsed a long time ago and the wood has been reused or covered by debris. Because of the heavy erosion only portions of the former cave chambers and very few remains of galleries with walls and supporting wooden beams are preserved.

From future excavation work, notably in the well-preserved and partly monumental cave systems in Northern Mustang, we hope to obtain addi-





Kagbeni Village:
Demolition of ancient houses adjoining the village square (Te). Above house 5 (Mingmar "A") with ceiling beams dated 1770 (first and second floors), below the demolished third and fourth floors of house 6 (Samdruk) with lintels and ceiling joists dated to 1572 at first floor and pillars and joists dated to 1771 on second floor level. Both were demolished in May 1993, foto June 15, 1993.



Kagbeni, house south of the square :
Sample 8 (1993) : Core of a lintel above an opening between two rooms, dated 1680.

Preliminary Report on the 1992 Campaign of the Team of the Institute of Prehistory, University of Cologne

-Angela Simons, Werner Schön, and Sukra Sagar Shrestha

In the high mountain region of Mustang District numerous multi-storey cave systems were dug by men into the faces of the rock massifs situated alongside the riverbeds. In Muktinath Valley remains of ancient village sites with ruined houses and former field-systems are often located in the direct neighbourhood of such cave systems. After the first surveys by the Nepalese geographer Harka Gurung and the Bonn University tibetologist Dieter Schuh, a preliminary archaeological study was carried out in a cave system in the upper Muktinath Valley in 1990. This yielded a series of radiocarbon dates and the first results concerning the former usage of these archaeological monuments (Simons 1993).

The aim of the Cologne University archaeological research programme is to carry out excavation work in selected cave systems and connected sites and thus collect data to build up a chronology of the prehistoric and medieval settlement of the high mountain region of Nepal. Additionally, we are making an effort to find out if there are connections between the cave settlements and cave burials, one of which is known in the Thakkhola (Tiwari 1985).

In 1992 three months of fieldwork (March to end of May) were carried out by the Cologne University team together with the counterpart from HMG Department of Archaeology[1].

We worked at three sites (Fig.1):[2]

1. In the Thakkhola near Marpha and Tukche: a salvage excavation in funerary caves;
2. in the upper Muktinath Valley near Dzar (Jharkot) and Dzong (Jhong): work in a cave system; and
3. in the lower Muktinath Valley near Kak (Kagbeni): excavations in the ruins and a cave system.

1. The Chokhopani cave burials

The funerary caves at the site of Chokhopani were completely buried by rock debris. The installation and removal of the water-pipe of the power-station opened and partly destroyed at least three cave burials at different levels (Fig. 2; Fig. 3). Parts of the finds - pottery, bronze, shell pendants, beads - were recovered and published in Ancient Nepal (Tiwari 1985).

After the pipe was removed, the open caves were subjected to heavy water erosion. Dieter Schuh found the caves endangered during his visit in October 1991 and recovered finds from the central cave. More than 100 ceramic vessels of different types and some metal ornaments were recovered (Fig. 4; Fig. 5; Fig. 9), and since then these have been stored in Marpha. The pottery shows incised and cord-roulette decoration (Fig. 6 above) and was probably locally made, as many pots are misfired. After Schuh's departure, some unauthorised persons climbed into the caves and destroyed the remaining structures.

During our 1992 salvage work we excavated the upper chamber, where we recovered the bones of several individuals, a number of potsherds and an iron nail (Fig. 11). Additionally, we rescued the endangered finds of the central and the lower cave (Fig. 6). In the lower cave the finds were protruding out of the wall and could only be recovered from there.

In the Chokhopani funeral caves the dead were buried with their ornaments - muskdeer teeth necklaces, shell pendants (Fig. 7 below), beads of bone, faience, and carnelian (Fig. 8), copper arm- and earrings (Fig. 9 below) and also with bodkins cut out of schist (Fig. 7 above). Numerous ceramic vessels were probably filled with meals for the dead and then put into the grave chamber. The water erosion in the shaft had destroyed the features; moreover, the bones were very fragile. Nevertheless, the bone analysis yielded astonishing results: the human bone fragments recovered from the three burial caves represent the remains of at least 21 individuals. Most of them are children below the age of 7 years (eleven individuals, three of them newly born), one child about 12 years old, two juvenile individuals (14-18 years) and at least seven adults[3].

As to the chronological order of the Chokhopani collective graves, the first investigators saw connections with the so-called "Copper Hoard Cultures"[4] (Tiwari 1985, 7; Mishra 1988, 14 footnote 7). Particularly, they interpreted the metal objects from Chokhopani (Fig. 10) as anthropomorphic figures. Such anthropomorphs are usually cast copper objects, several of which are known from "Copper hoard" sites in the Gangetic Basin. They are of different shapes, but all the complete specimen have a "head", "arms" and legs". The Chokhopani metal objects are lacking the head; they rather look like animal hides. Moreover, they are not cast but embossed to a very thin (2-3 mm) sheet.

The objects stored in Kapilvastu Museum have not yet been analysed as to their metal content. However, the analysis of the cross-shaped object (Fig. 9 above) recovered in Chokhopani 1991 revealed an interesting result: 45% copper, 30% tin, 4-5% zinc. This analysis[5] identifies the metal used as tin bronze. This result is significant because the copper of the copper hoard objects is usually only alloyed with arsenic (or iron), but not with tin (Agrawal 1974; Yule 1992, 234).

The metal analysis is one of the reasons that makes us suggest that in the Chokhopani cave burials we are not dealing with the remains of the

chalcolithic period. Another hint is the occurence of an iron nail recovered from the upper burial cave together with other grave goods (Fig. 11 below). Moreover, there are no traces of a lithic industry in Chokhopani, although suitable quartzite material would have been available in the river deposits. The pointed, thin bodkins (Fig. 7 above left) of hitherto unknown function are made of schist, a very brittle material.[6]

To conclude this excourse concerning the chronology of the Chokhopani findings, we have to look at the pottery. It is built-up by hand in coils, grey to brown in colour, and probably locally made, because of many misfired vessels. There are also no direct parallels.

Therefore, we have to rely fully on radiocarbon dates.[7] We have now received a radiocarbon date which derives from one of the grave goods, the remains of a birch bark vessel (Fig.8 below). It gives the date of BP 2575 ± 19 (calBC 801 - 792).[8] This date gives the first hint of an early prehistoric settlement in this region. The finds show that there were connections with the Indian Subcontinent, as well as with Tibet and Central Asia. Further investigations are needed to gain more data on this culture.

2. The cave system in the upper Muktinath Valley (the site of Mebrak)

Our next site is situated about 1000 m higher and about 20 km to the north of the Chokhopani burial site in the upper Muktinath Valley (Fig. 1). The large rock massif belonging to the village of Dzong (Jhong), which is situated opposite the village site of Dzar (Jharkot), contains six multi-storey cave systems.

The aim of our work there was to disentangle the chronology of the utilization of the cave systems and their relationship towards the house ruins situated in front of them. We have just started our documentation and excavation work there and plan to continue this in the years ahead.

We were able to document the two main storeys of one large cave system. An interesting feature of this system is an 8 m-long passage which connects several cave rooms in the interior of the rock. In some chambers there are structures built of mudbricks, which were probably used to store the crop. The storing structures are mostly box-shaped (Simons 1993, Fig. 5), but they also can be dome-shaped (Fig. 12 below). Also, some of the cave rooms are furnished with hearths and their ceilings are covered with soot.

The walls of many caves are plastered with mud tempered with plant remains. Several types of barley, wheat and buckwheat have already been identified.[9] Especially in the lower floor, the walls of some chambers show traces of elaborate painting, thus bearing witness to the last occupation of the caves by Buddhist hermits. The finds in the caves are from everyday utensils, mainly potsherds.

A really thrilling result was obtained from one large cave chamber situated at the foot of the rock massif and recently used as shelter for goats (Fig. 12 above). Below several floor levels with crop remains we excavated the remains of a pit. Here we found pottery fragments which in texture and shape reminded us of the pottery recovered from the Chokhopani burial caves in the Thakkhola (Fig. 13). A highly precise radiocarbon date confirms the connection with the Muktinath Valley settlement caves (about 3600 m above sea-level) and the funeral caves in the Kaligandaki Valley (about 2700 m above sea-level). It

produced a date of BP 2615 ± 25 (calBC 810 - 799).[10] This is hitherto the earliest evidence for the settlement in the high mountain region and - in particular - in the cave systems of Mustang.

3. Cave system and ruins in the lower Muktinath Valley (the site of Phudzeling)

Finally, our last site shows that the settlement of this area goes far back into prehistoric times. We worked in the cave system and the ruins of an ancient settlement in the lower Muktinath Valley, one hour walk east of Kak (Kagbeni). On the river terrace about 30 m above the river Dzong the remains of 34 houses are preserved. The heavily eroded cave system towers some 70 m above the houses (Fig. 14). The work at this site gives a hint of the depth of time in which both the cave system and the ruined site were in use.

The latest settlement traces were rcovered from the ruined houses (Fig. 15). In the remains of one of these several interior walls and floor levels were uncovered in an excavation trench. In one corner we dug a small trench down to the oldest foundation of the building, more than 1.50 m below the surface. A radiocarbon date obtained from a fireplace in the third floor level (about 50 cm below the surface and thus still more than 1 m above the foundation) shows that this phase of the building belongs to the 17th century (AD 245 ± 35 = calAD 1642 - 1663).[11] The oldest date which hitherto has been obtained from one of the ruined buildings goes back to the 13th century, so that we can conclude that the village site in its present appearence had existed for at least 400 years.

However, there are also traces of a much older settlement at this site. In a settlement layer between the house sites we were able to recover some bronze ornaments and bodkins of schist similar to the finds of Chokhopani. The pottery shows a wider range of ware, shape and pattern. The radiocarbon analysis of a charcoal sample from this feature shows that the site was already inhabited in the Iron Age period, only 300 to 400 years later than the period represented in Chokhopani and in the cave in the upper Muktinath Valley described above (BP 2222 ± 24 = calBC 363 - 200).[12]

Moreover, we have evidence of an even earlier occupation of this site. It was obtained from the cave system behind the ruins. Dug into the easternmost peak of the rock massif, we found the remains of a passage with some preserved stone steps leading upwards (Fig. 17). From a pit below the stairs, apart from animal bones, we recovered a pottery vessel of a new style with an impressed decoration (Fig. 18 above), together with a few potsherds of Chokhopani ware. A radiocarbon date yielded by the fragments of a basket or a mat (Fig. 18 below) lying at the base of the pit proves this feature to be contemporary with the burial caves in the Thakkhola and the pit in the neighbouring site of Mebrak: BP 2565 ± 55 (calBC 805 - 766).[13]

The passage - like a spiral staircase - leads up to the top of the rock, where we discovered the ruins of a tower built of stones (Fig. 17). The tower, with a slightly trapezoid base, seems to be a watchtower from which the valley could be controlled, almost to the confluence of the Dzong Khola and the Kaligandaki. These findings indicate a convincing possible utilization of the cave systems: the people staying in the houses and fields on the terraces alongside the river could be called to the shelter of the caves, once an enemy had been recognized from the tower.

Despite it having been heavily destroyed by erosion, so that only small portions of the cave chambers had been preserved, the work in this cave system proved to be quite successful. We were nevertheless able to document some new types of features - for example, passage and tower described above - and other finds which shed more light on the different functions of the cave systems.

Furthermore, evidence was found of a ritual use in the remains of a cave chamber, where we uncovered a large hearth. In its fire-pit we found, apart from charcoal and animal bones, several metal objects and three wooden phurbas (Fig.16 below). Special finds were fragments of paper with Tibetan script and drawings. In the adjacent floor we excavated fragments of twelve small images made of unburnt clay depicting horses, measuring 3-5 cm (Fig. 16 above). The tibetologists D. Schuh and C. Ramble think that all these objects could be the remains of a fire ceremony carried out in this cave. As for the dating of this event, we received a radiocarbon date from the charcoal in the fire pit (AD 1008 ± 24 = calAD 1012 - 1028).[14] Thus, our finds belong to the oldest sources of Tibetan script in this region.

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From future excavation work, notably in the well-preserved and partly monumental cave systems in Northern Mustang, we hope to obtain addi-

tional data for the further understanding of the cultural importance of the cave systems in the settlement processes of the high mountain region of Nepal.

Notes

1. We would like here to extend our deepest thanks to the Director and the members of HMG Department of Archaeology for the valuable help they offered in preparing the way for our research. Also, we would like to thank all the Nepalese officials and friends in Mustang; without their kind support our excavation could not have taken place. The work in the caves would not have been possible without the collaboration of our spelaeologist Daniel H. Gebauer, who also did all the mapping of the caves. We want to thank him warmly for his skilled work. Also, we would like to thank the three students of Cologne University who participated in the excavation work - Iris Reuter, Klaus-Georg Kokkotidis and Frank Goldschmidt.

2. The finds were drawn by Stephanie Laub, as well as some of the illustrations. The drawings of the map and some of the site plans were carried out by Daniel Gebauer.

3. We owe these results to Prof. Dr. Manfred Kunter and Mrs. Babette Ludowici, Gießen University.

4. There is a number of sites throughout northern India, mainly in the Gangetic Basin, where hoards of copper objects of certain types were deposited: anthropomorphic figures, celts, harpoons, antenna swords, axes (B.B. Lal 1951; M.Lal 1981; Yule 1992 with a detailed bibliography and a recent reassessment of the problem). By inference, the hoards have been connected to neighbouring non iron-using "chalcolithic" sites; the few radiocarbon dates set these sites into the second half of the second millenium (around calBC 1200-1000).

5. The energy dispersive X-ray analysis was carried out by Kurt Hangst, Museum of East Asian Art, Cologne.

6. The objects described as "arrow heads of chert" (Tiwari, 1985, plate 6 A) are, in reality, also bodkins made of schist.

7. A series of highly precise radiocarbon analyses was carried out Dr. Bernd Kromer, ^{14}C-Laboratory Heidelberg.

8. HD 15597-15059

9. The palaeo-ethnobotanical examination of the macroremains in the soil samples is being carried out by Dr. Karl-Heinz Knörzer, Neuß.

10. HD 15598-15038

11. HD 15600-15084

12. HD 15599-15087

13. HD 15601-15058

14. HD 15602-15146

15. One can get an idea of the former appearance of the inhabited cave systems by looking, for example, at the rock temples in Central China.

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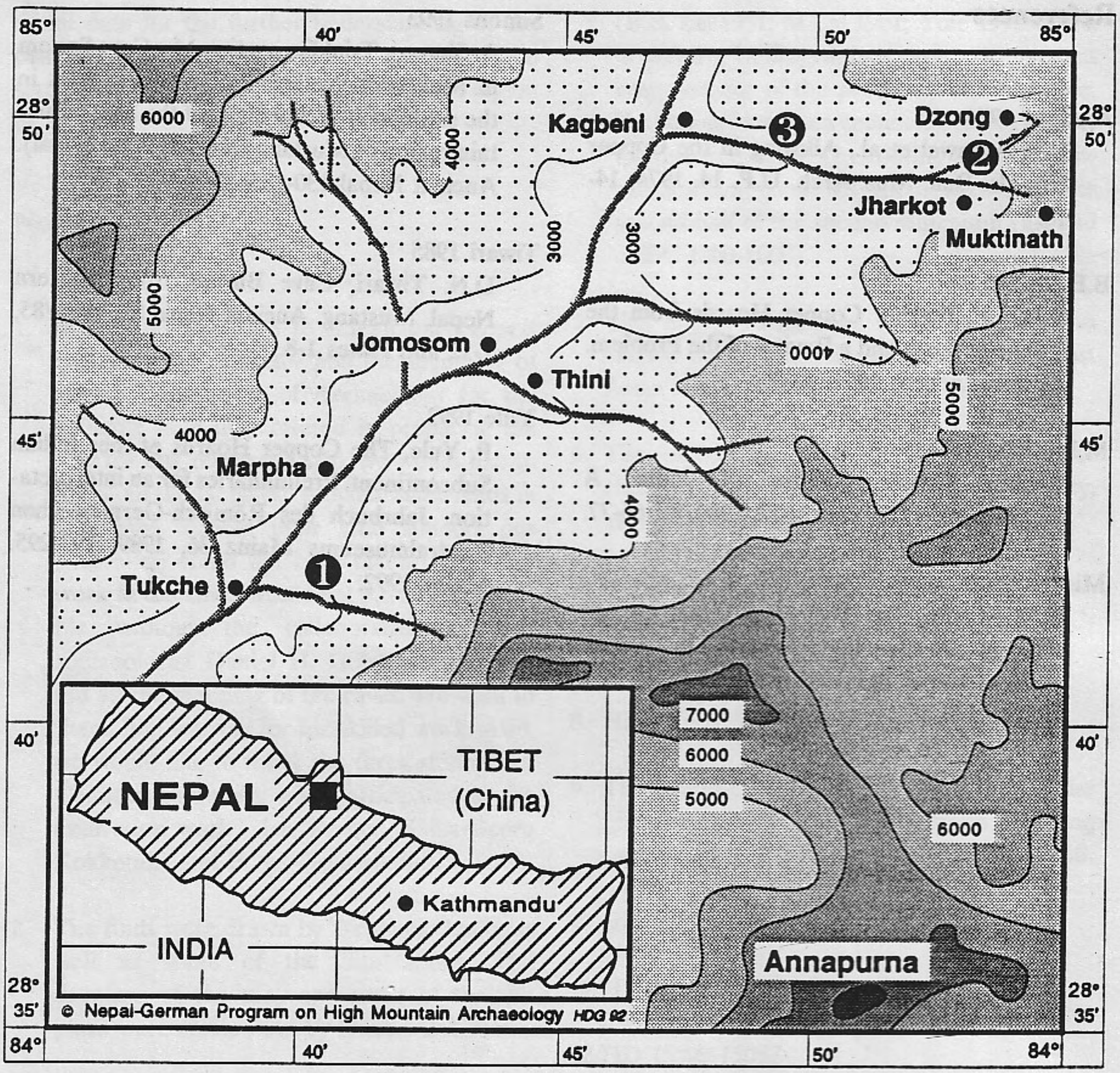
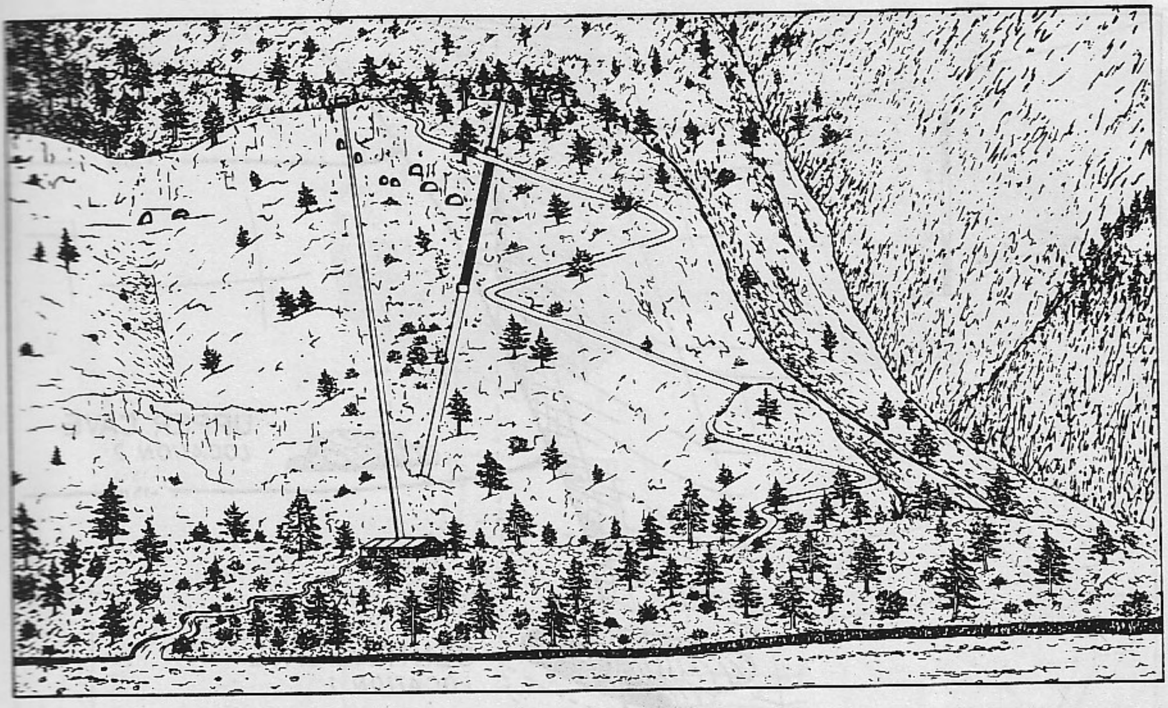


Fig. 1 Map of the southern part of Mustang District. The archaeological sites are marked:

1 Site of Chokhopani in the Thakkhola
2 Site of Mebrak in the upper Muktinath Valley
3 Site of Phudzeling in the lower Muktinath Valley



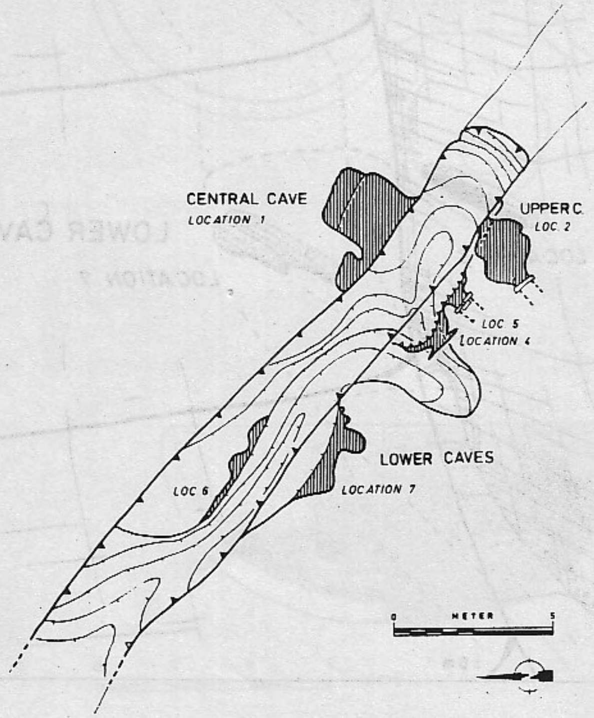


Fig. 2 above: View of Chokhopani site from the West with the two shafts for the water pipe of the power station. The southern (right) shaft opened the three burial caves.
below: Plan of the shaft with the three burial caves projected from above.

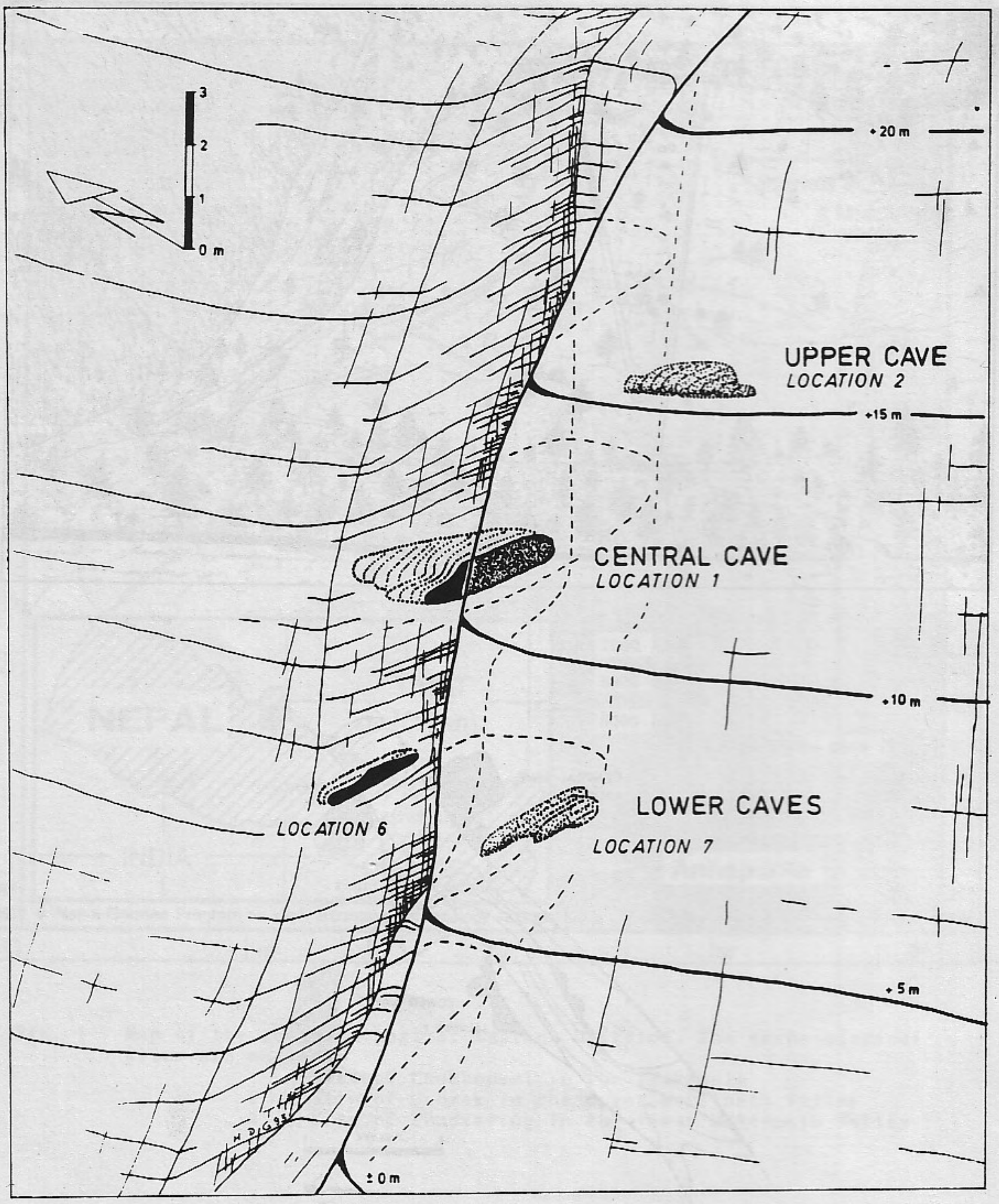


Fig. 3 Spatial view of the shaft with the three burial caves

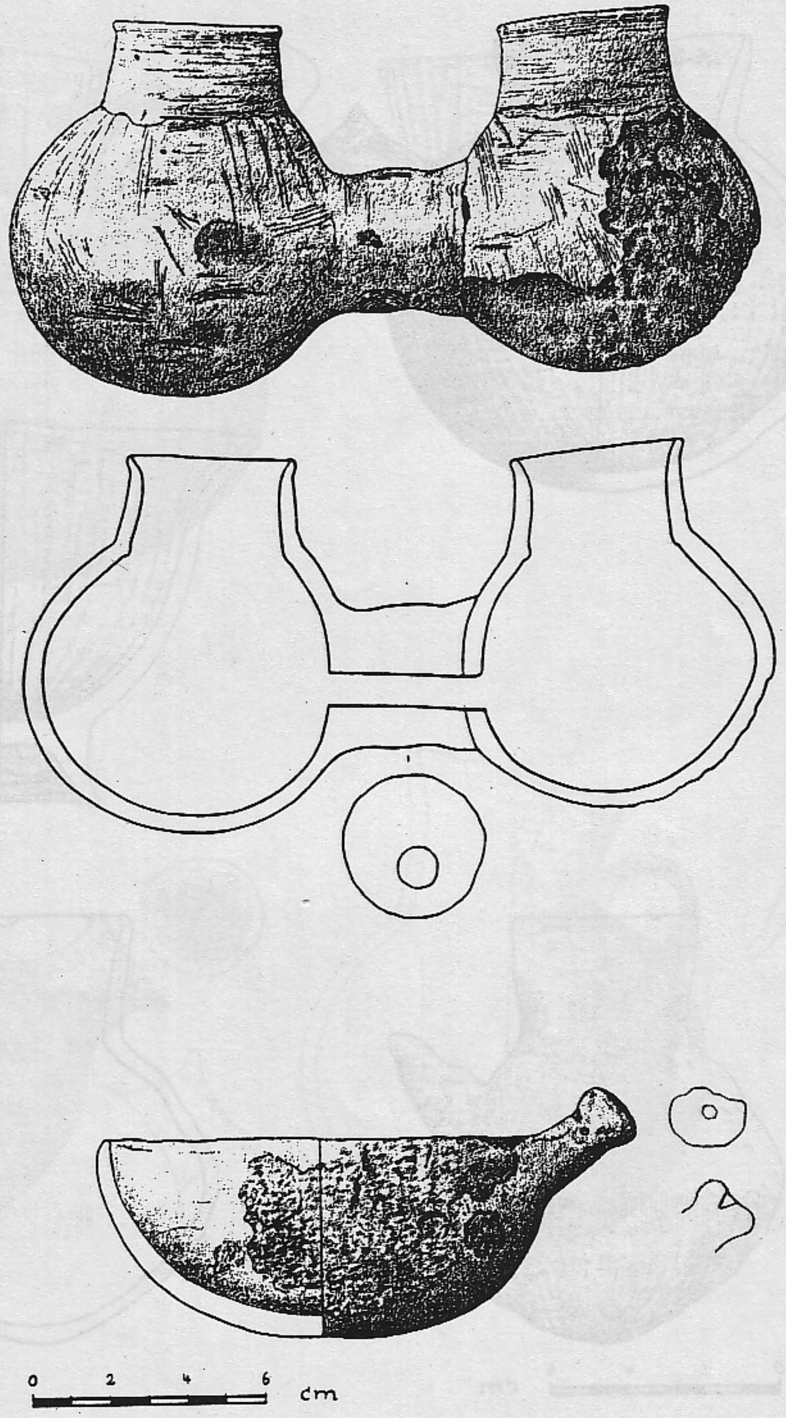


Fig. 4 Pottery recovered from the central burial cave (Location 1). Scale 1:2.

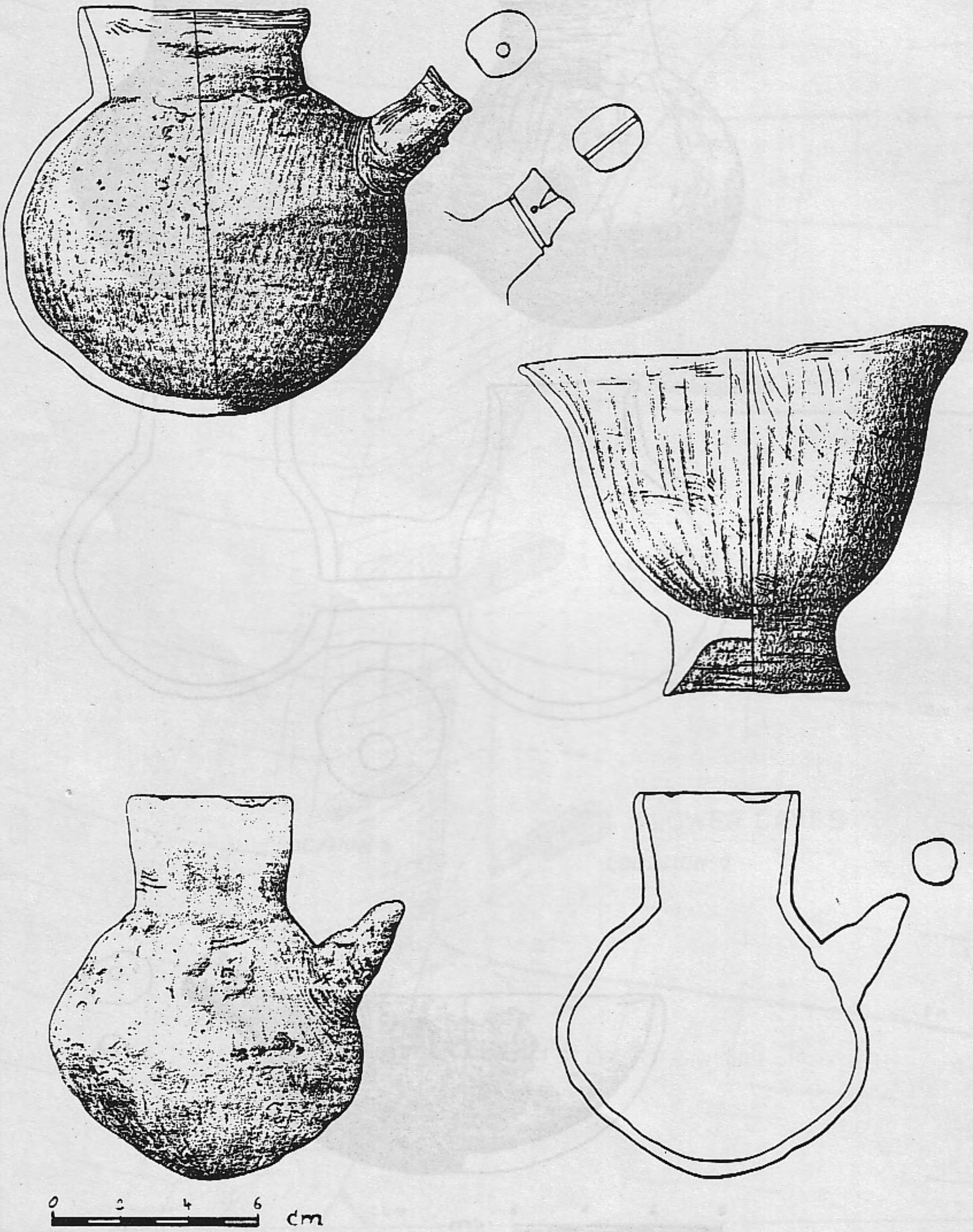


Fig. 5 Pottery recovered from the central burial cave (Location I). Scale 1:2.

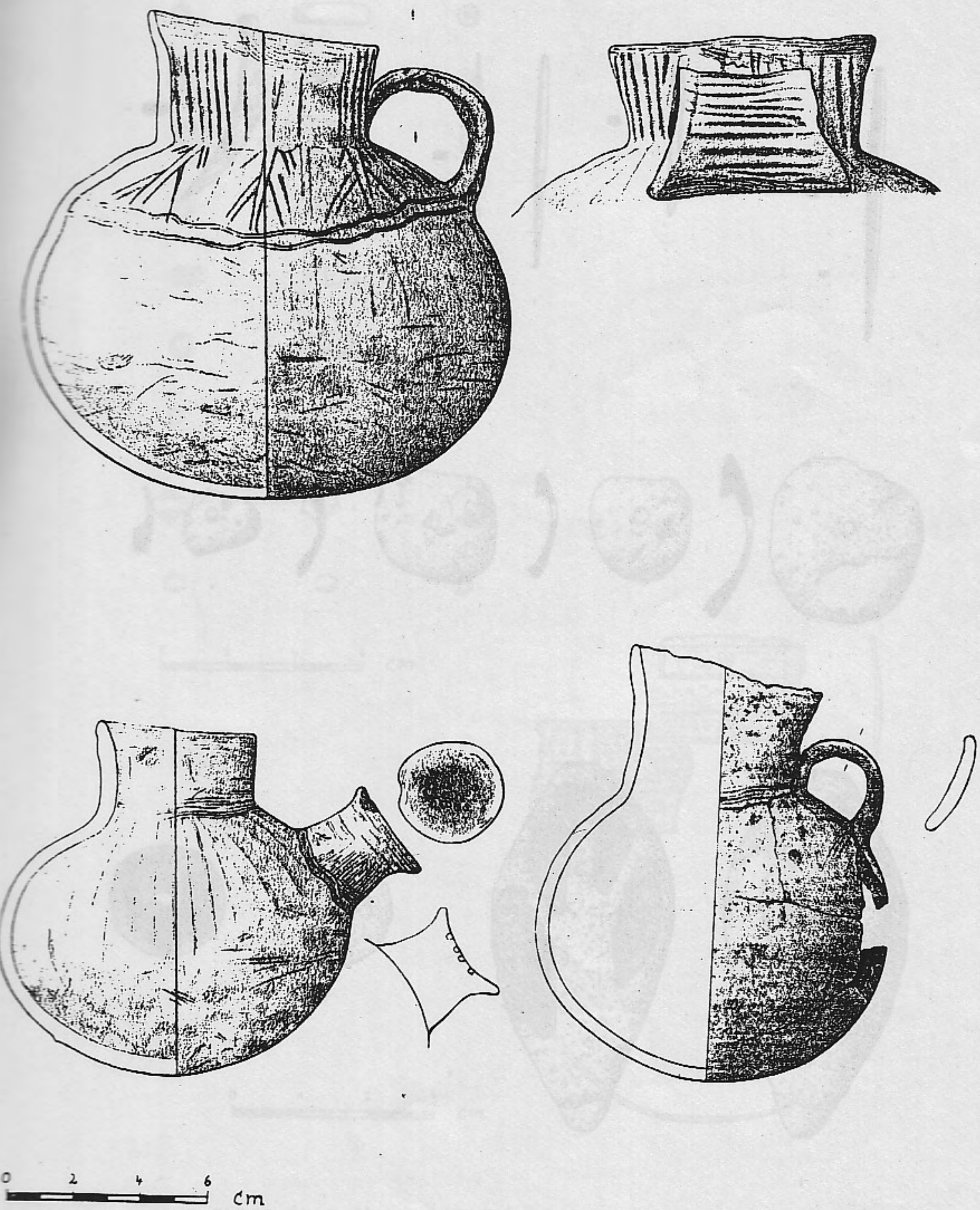


Fig. 6 Pottery recovered from the lower burial cave (Locations 6 and 7). Scale 1:2.

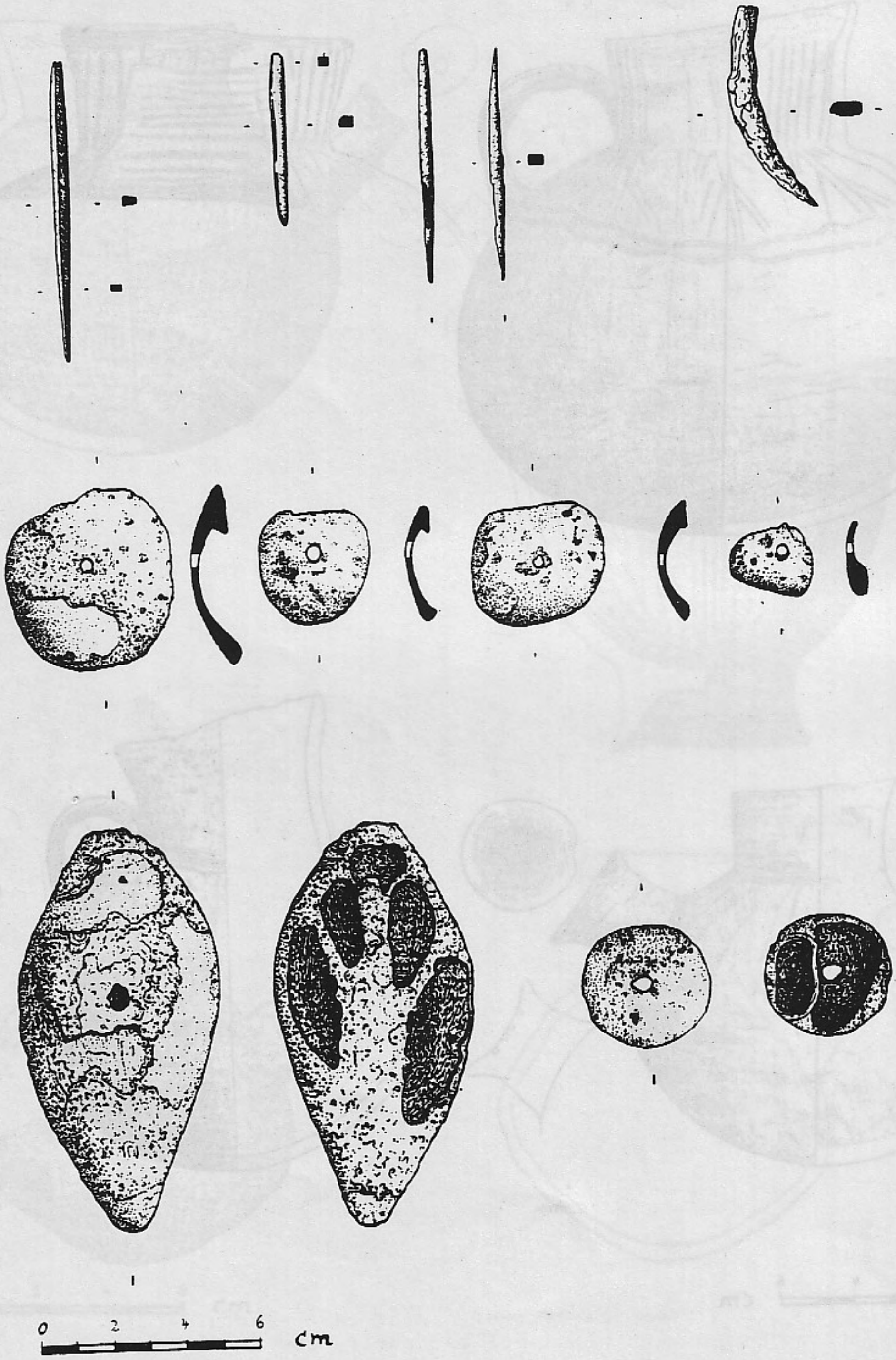


Fig. 7 Grave goods from the central burial cave (Location 1). above: muskdeer tooth (right) and bodkins made of schist, below: shell ornaments. Scale 1:2.

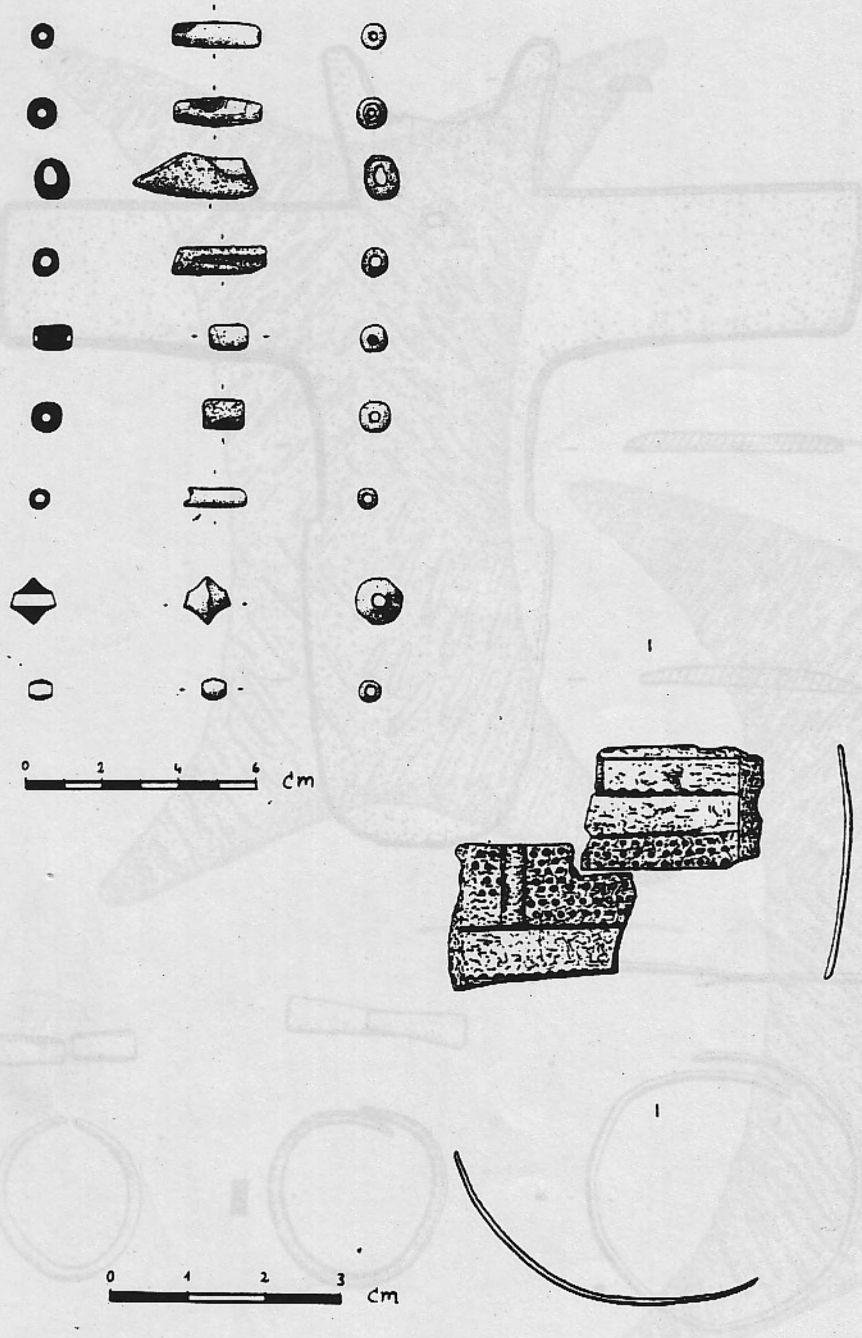


Fig. 8 Grave goods from the central burial cave. (Location 1).
above: beads made of carnelian, shell, and faience. Scale 1:2.
below: fragments of a beaker with incised decoration made of birch bark. Scale 1:1.

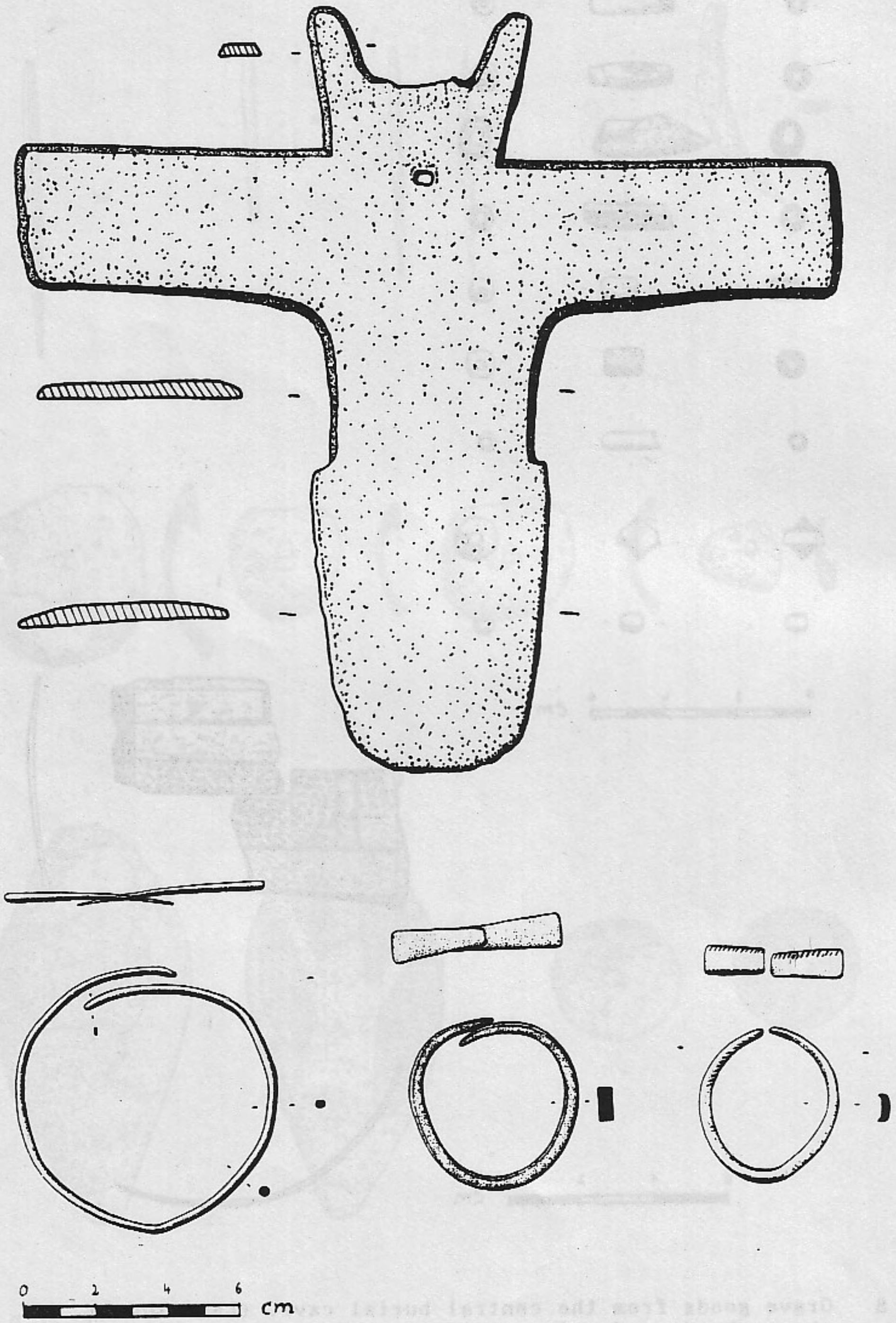


Fig. 9 Bronze object and copper bangles from the central burial cave. Scale 1:2.

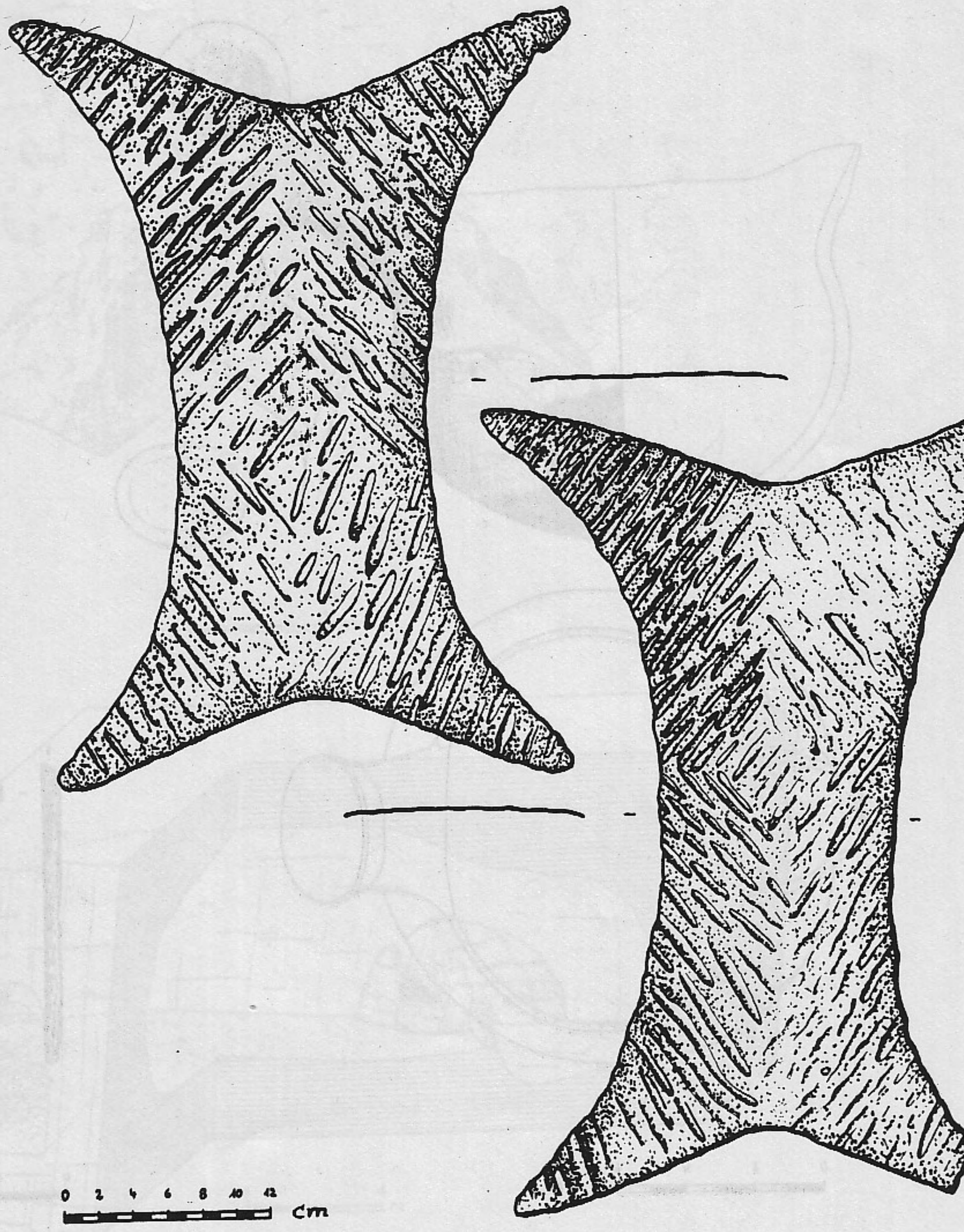


Fig. 10 Embossed bronze or copper sheets, recovered probably from the lower burial cave. Scale 1:4.

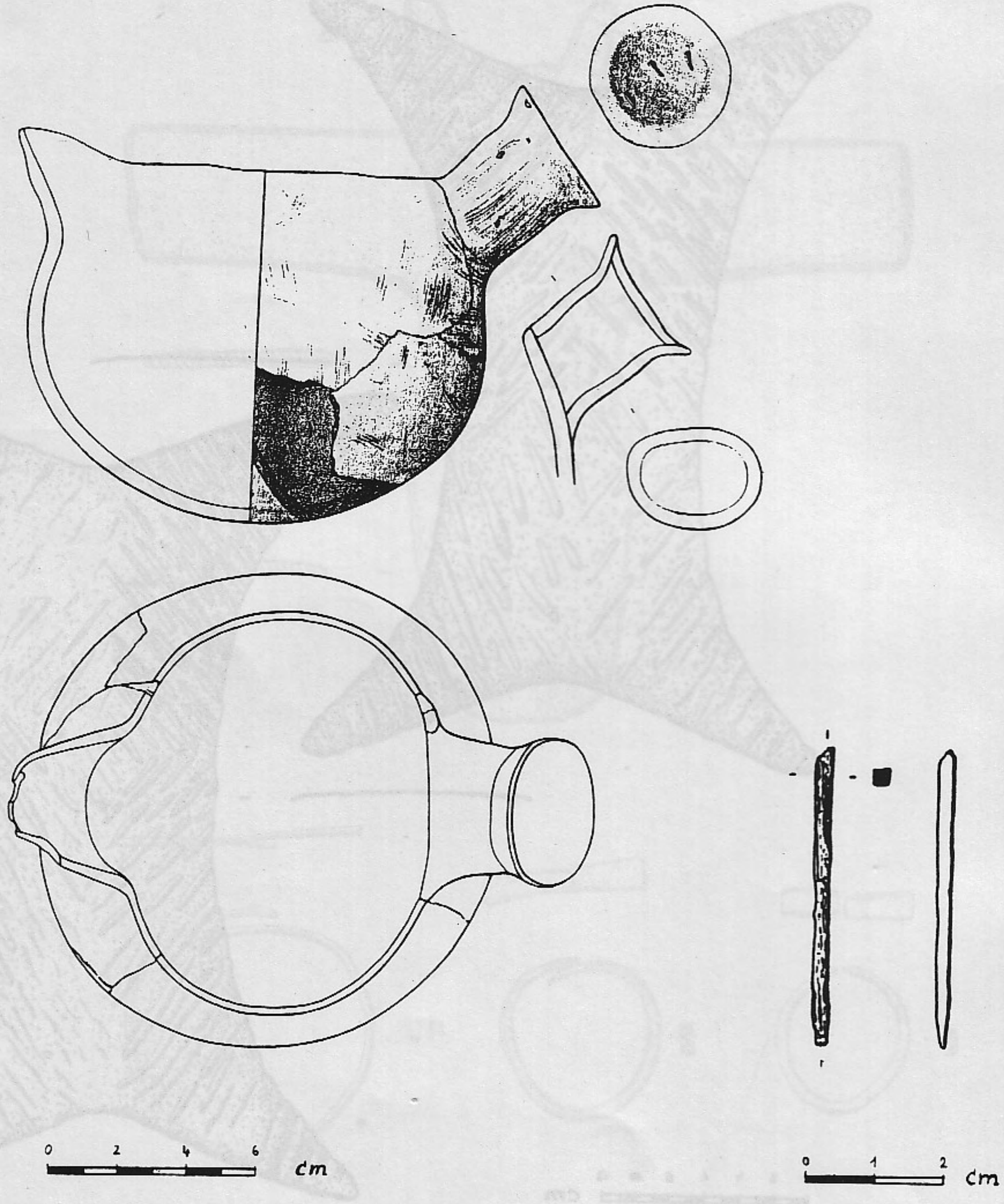
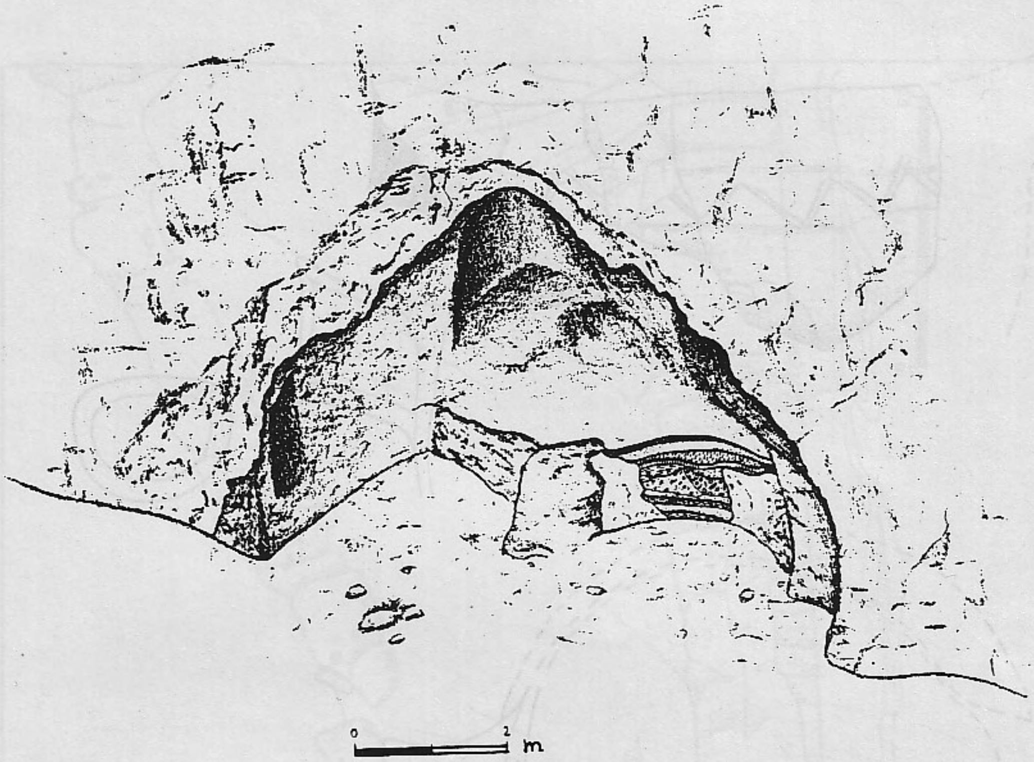


Fig. 11 Pottery (Scale 1:2) and iron nail (Scale 1:1) from the upper burial cave.



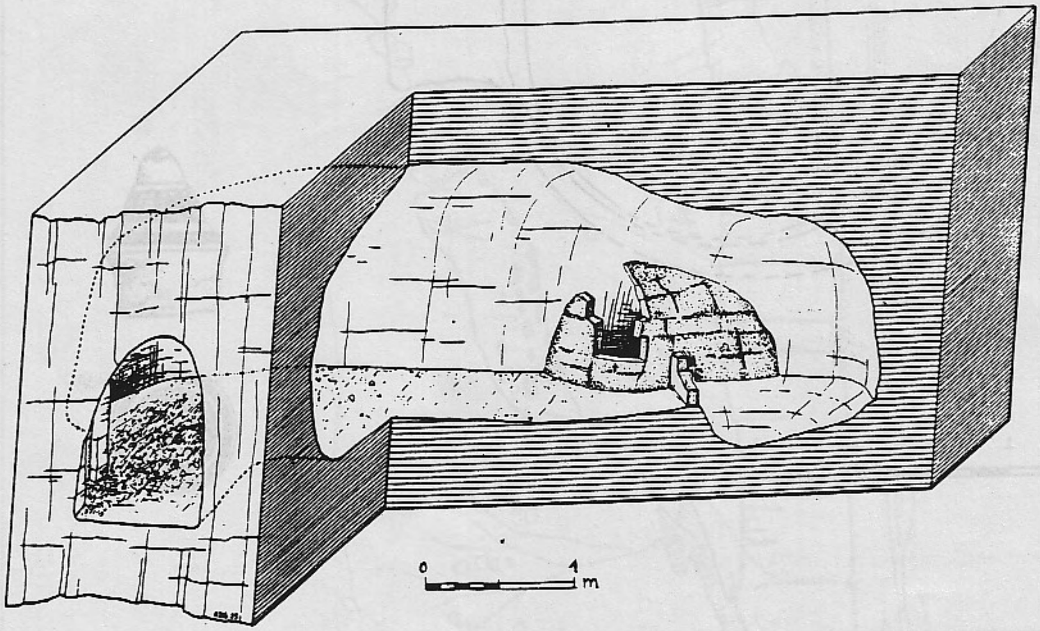


Fig. 12 Site of Mebrak in the upper Muktinath Valley (site 92.5)
above: View of the accessible cave (Location 2) with the profile of the prehistoric storage pit and the overlaying younger occupation levels from the South.
below: Section of the cave room with the dome-shaped mudbrick structures (Location 33).

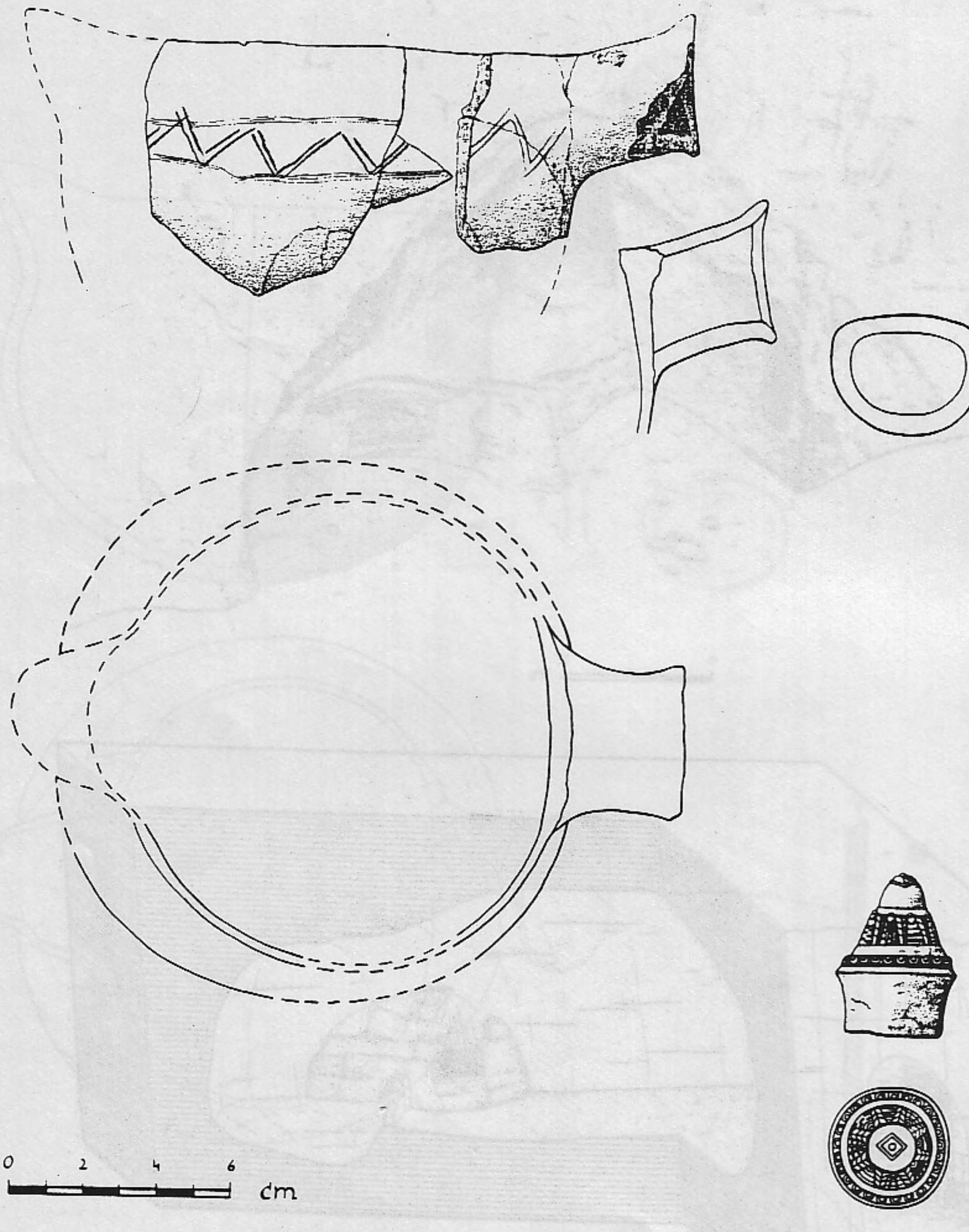


Fig. 13 Finds from the cave room Location 2, site 92.5: Chokhopani type pottery from the storage pit and a stupa-shaped tsatsa from the settlement layers above.

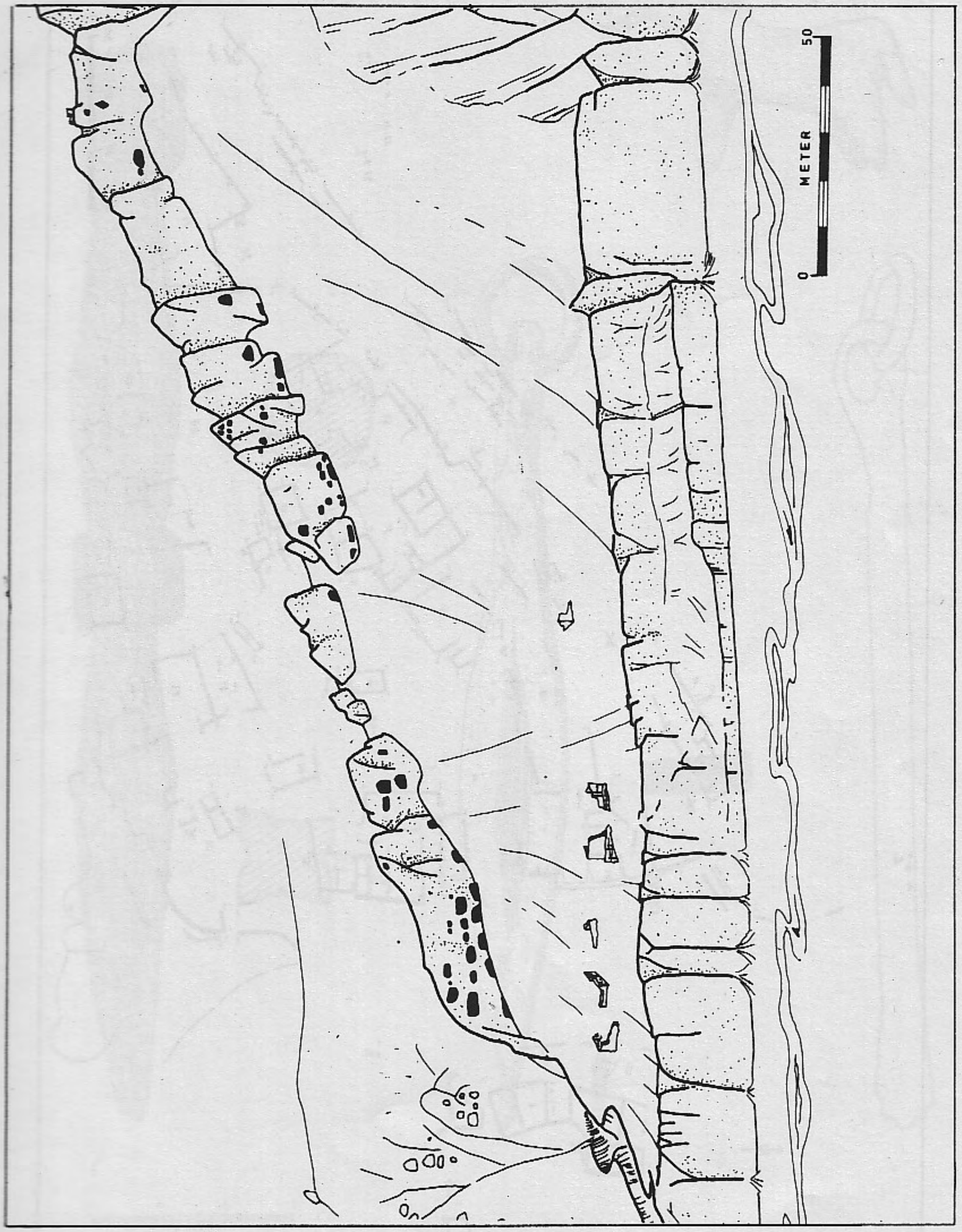


Fig. 14 View of the Site of Phudzeling in the lower Muktinath Valley from the South - cave-system (site 92.17) and ruins (site 92.16).

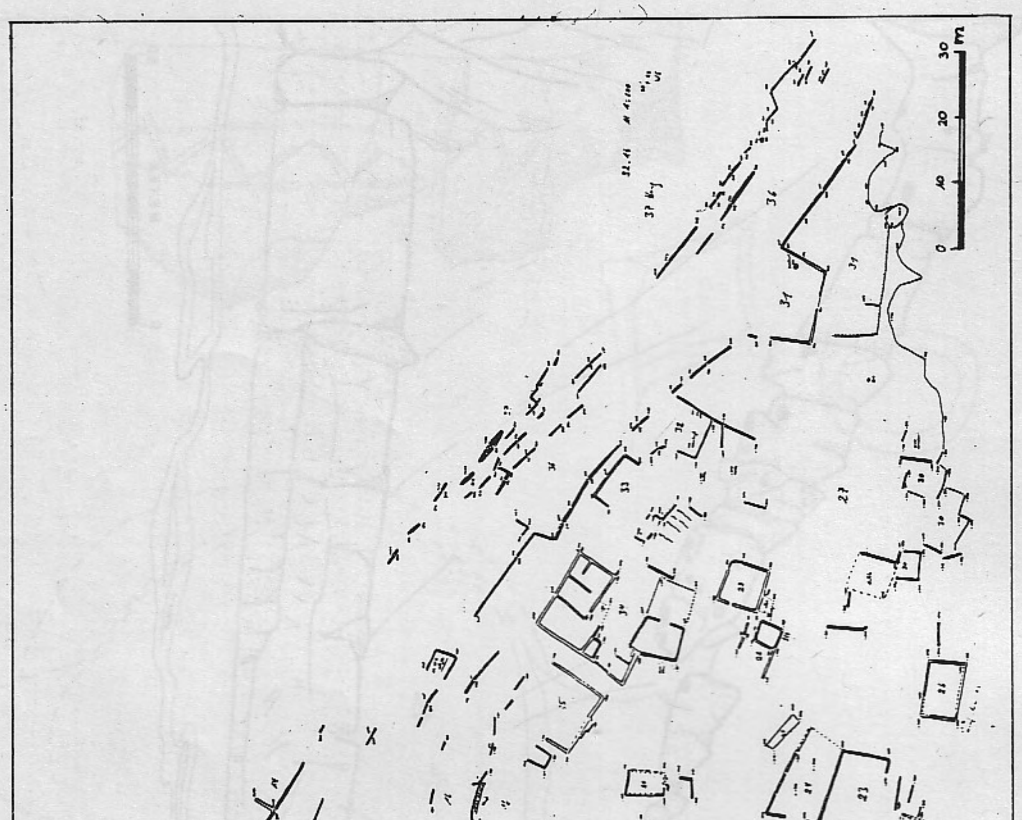


Fig. 15 Plan of the ancient village site of Phudzeling (site 92.16) with the remaining building structures.

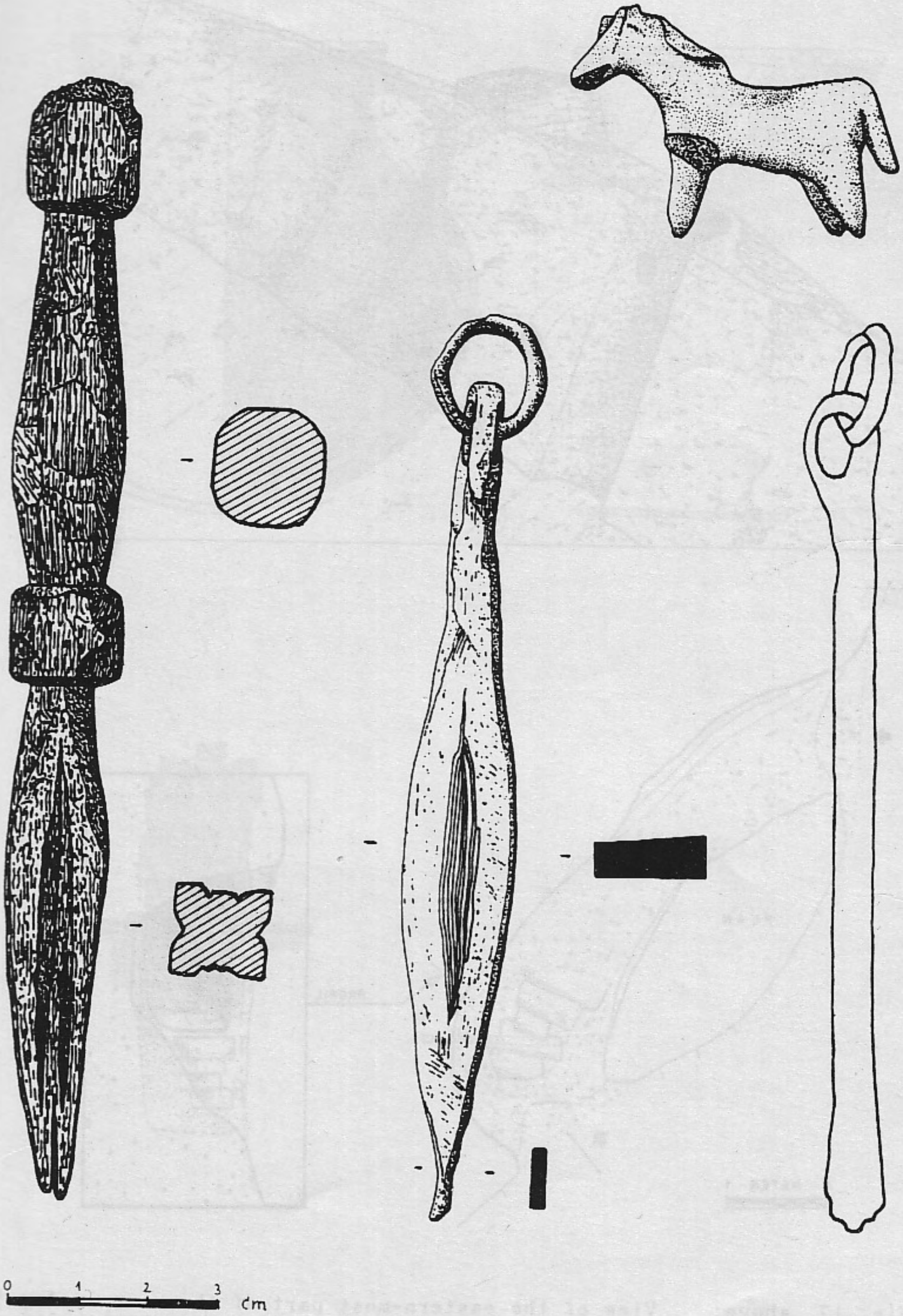


Fig. 16 Finds from the cave room Location 19, site 92.17. Scale 1:1.
above: horse made of unburnt clay
below: wooden phurba (left) and iron ritual object (right).

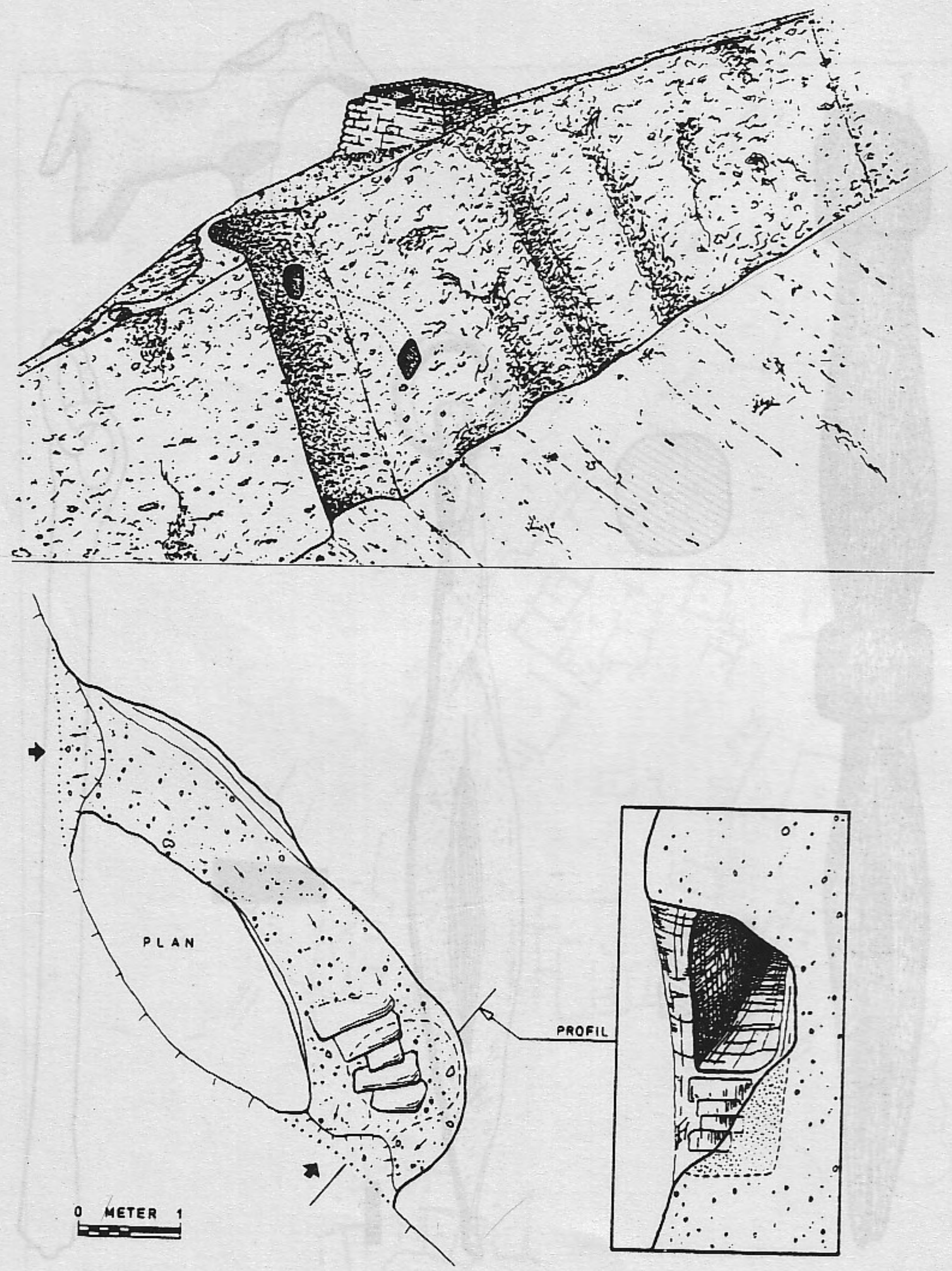


Fig. 17 above: View of the eastern-most part of the cave system 92.17 with the passage (Location 40) leading up to the ruins of the tower on top of the rock face (Location 41).
below: Plan and section of the passage Location 40 with the remains of the stairs leading upwards.

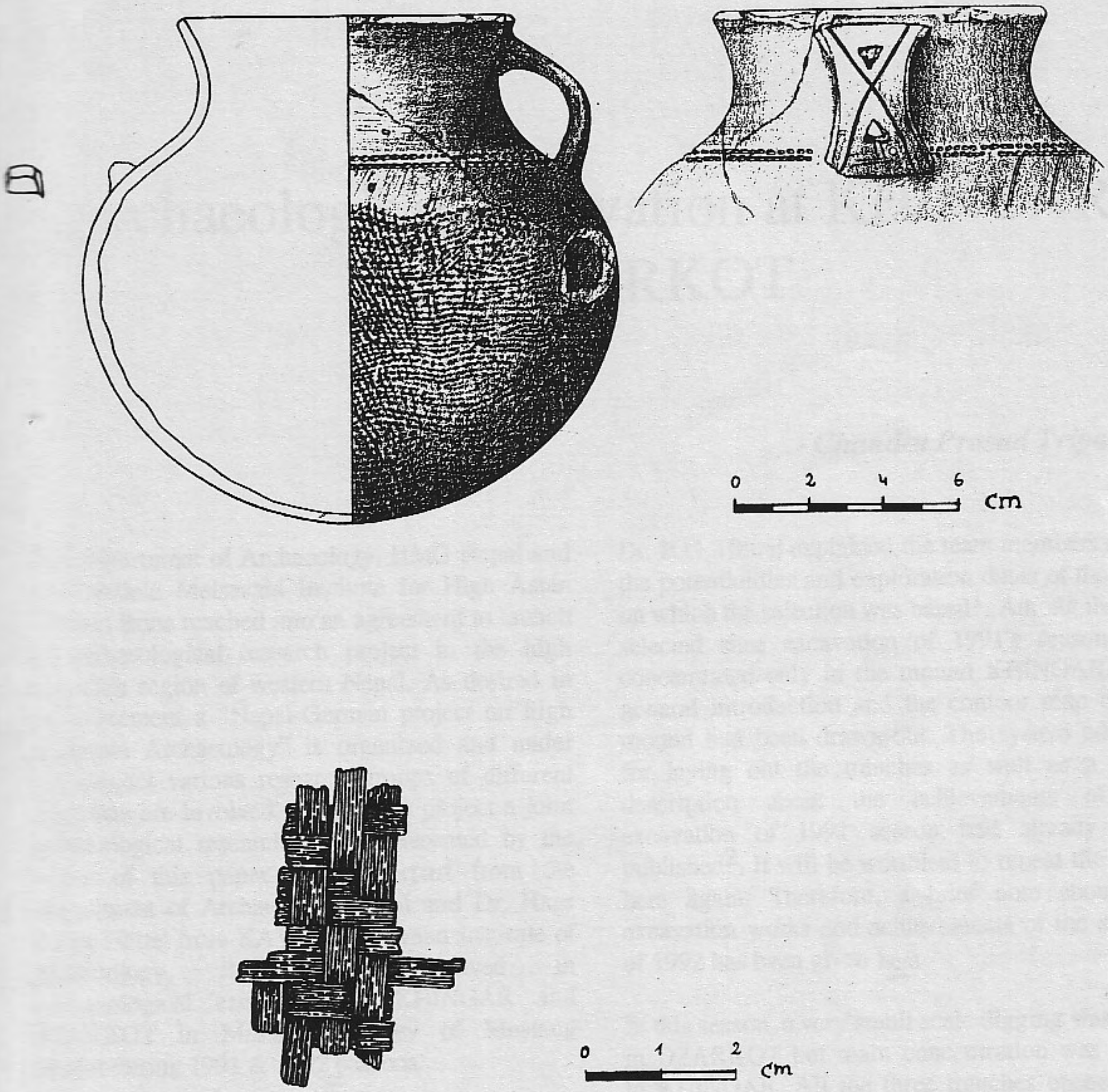


Fig. 18 Finds from the prehistoric pit below the stairs of Location 40:
above: Clay vessel with incisions and cord impressions. Scale 1:2.
below: fragments of a mat or a basket made of bamboo. Scale 1:1.

Archaeological Excavation at KHINGAR and DZARKOT

- *Chandra Prasad Tripathee*

The Department of Archaeology, HMG Nepal and the Coufield Meisezahl Institute for High Asian Studies, Bonn reached into an agreement to launch an archaeological research project in the high mountain region of western Nepal. As desired in the agreement a "Nepal-German project on high mountain Archaeology" is organized and under this project various research groups of different discipline are involved. Within this project a joint archaeological research team represented by the writer of this paper as counterpart from the Department of Archaeology Nepal and Dr. Hans Georg Hüttel from KAVA the German Institute of Archaeology, Bonn was involved in Archaeological excavation at KHINGAR and DZARKOT in Muktinath valley of Mustang district during 1991 & 1992 seasons.

The main objective of the excavation is to reveal the cultural sequences of Muktinath valley and correlate them with the fortresses and "Cave cities" of that part of Mustang district as well as to acquire scientific archaeological datas regarding the settlement history of the high Himalayan belt.

To meet the above mentioned objective, the joint archaeological team selected two archaeological sites KHINGAR and DZARKOT for excavation. Dr. H.G. Hüttel explained the team members about the potentialities and exploration datas of the sites on which the selection was based[1]. Among the two selected sites excavation of 1991's season was concentrated only in the mound KHINGAR. The general introduction and the contour map of the mound had been drawn-out. The system adopted for laying out the trenches as well as a short description about the achievements of the excavation of 1991 season had already been published[2]. It will be worthless to repeat the same here again. Therefore, a brief note about the excavation works and achievements of the season of 1992 has been given here

In this season, a very small scale digging was done in DZARKOT but main concentration was again in KHINGAR. All the three trenches opened last year in KHINGAR were dugdown to the level of virgin soil and the excavation revealed very interesting archaeological datas like structural remains, potteries, antiquities and various features in stratigraphic layers and plans.

The structural remains exposed in KHINGAR showed us atleast three settlement phases in the mound. A careful study of the structural phases gives the idea that the settlers during the Ist phase

of the settlement, just constructed a fort or strong fortified structure in centre of the mound. Some portions of the fortified structure were broken down and the rest were reused while they constructed smaller houses during the IInd phase of the settlement. In the IIIrd phase the settlement was extended to almost all possible areas of the mound and the fortification walls were erected all around. Thus it seems that from the beginning to the medieval period the settlement in KHINGAR became larger and larger, developing to a huge fortified village.

A large number of potsherds of different types and shapes were discovered from the trenches. Though the scientific datas (Lab-results of T/L analysis) are still to come, the typological studies of shapes, fabrics and type of the KHINGAR ware generally suggest three different phases correlating the architectural phases of the mound. Most of the potteries are of local origin but few foreign (imported from South) origin. Sherds were also recorded. The ratio of foreign potsherds increase in the IInd and the IIIrd phases, compared to the Ist phase. The potteries of local origin are exclusively handmade and coarse fabric with basket marks and rug impression on the body.

The scientific explanation of the KHINGAR ware will come out after the laboratory report of T/L analysis and other studies of the types and fabric techniques which will help us to establish the ceramic type and cultural sequences of this mound.

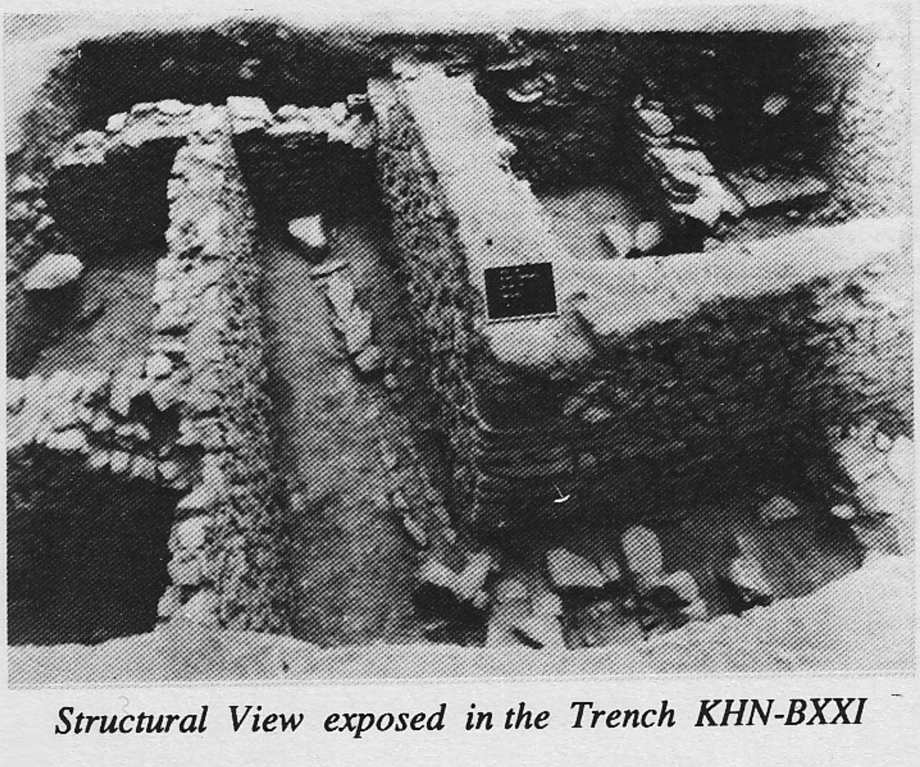
The antiquities found in KHINGAR excavation are very few and they help for dating the site, but some noteworthy findings are terracotta miniature, holy water vessel, fragment of a brick-tile with Tibetan inscription, which may read as "Om Mane Padme hum" as well as some terracotta and precious-stone beads. These antiquities have provided various informations about the ritual and religious practices of ancient KHINGAR people in different stratified layers.

In DZARKOT, the team laid down a small trench measuring 8 x 4.50 m just in front of the ruined castle. The excavations reveal the surprising result that the big castle was constructed just on the top of the mound without any foundation. Antiquities found in the trench are very few and do not provide any important information of the site and the castle. Though the notable number of potsherds were collected from the excavation the diagnostic value is very poor. The excavation shows trace of the old 'entrance' and enough evidences to reconstruct the collapsed part of the castle. Further more excavation is necessary to acquire sufficient archaeological information of the site and castle.

To conclude, the two seasonal archaeological works done in KHINGAR and DZARKOT are very significant in view of the target to meet the objective set earlier. In DZARKOT, further excavation is suggested and more study is necessary. In KHINGAR the study team got a multi-layered settlement of at least three phases. They provide a well stratified cultural sequences for Muktinath valley. The excavation of the KHINGAR mound has yielded enough datas for medieval archaeology of the Himalayan belt. Thus in the near future the archaeological site KHINGAR may rank as the model site for the Himalayan Archaeology of Nepal.

1. Hüttel, H.G, 1993: Excavation at Khingar Mound 1991. Ancient Nepal No.134, Kathmandu.
2. Hüttel, H.G. Ibid.

Ruins of DZARKOT Castle and Excavation Trench behind it.



Structural View exposed in the Trench KHN-BXXI

Reflections on the Existence of Castles and Observation Towers in the Area under Investigation, the South Mustang

(Thini - Jomsom - Dankardzong - Kagbeni - Jharkot)

-Christian G. Seeber

Previous research has shown a diversity of powers influencing the present-day district of Mustang in past centuries (Jackson 1978; Ramble and Vinding 1987; Schuh 1992; etc.). The political intrigues are said to have originate in the 7th century (Jackson 1978).

In past centuries the geographical and geological circumstances of the Kali Gandaki valley have led to the establishment of one of the most important trade routes between the Indian subcontinent and the Tibetan plateau. Kingdoms and local dukedoms struggled to bring it under their control through both wars and political settlements.

Jackson (1978) list's the following powers which have succeeded in controlling modern Mustang:
7th to 9th century, Greater Tibet;
13th to 14th century, Gung-Thang;
16th century, Jumla;
17th century, Ladakh;
18th century, (for a second time) Jumla;
late 18th century (1789), Gorkha.

However, Schuh considers the first separation of local control in the Muktinath valley from Lo and their submission to Jumla as having taken place in the 17th century.

In the last 400 years a great number of castles of various types have been built in modern Mustang in order to control the trade and the road network on which it was based and in order to secure territorial control.

Snellgrove (1979) already mentions the impressive castle ruins of Dzong called Rab-gyal-rce.

According to Schuh (*Untersuchungen zur Geschichte des südlichen Mustang*, 1992) Tsampal Thukci is the founding clan of the castles of Dzong and Dzar.

According to the oral history passed down from a descendant of the clan, *dPal-mgon-khro-rgyal*, the castles of Kag and Dzar and a smaller building in Dzar were built by the younger "Tsampal-Thukci brother".

In his essay on Tibetan sources on the pilgrimage site of Muktinath, Ehrhard (1993) has brought together the references of present-day authors which indicate the early existence of castles or castle settlements in its surroundings. Jackson (1978), for instance, has found the toponym "Mu-khun" in the Gung-thang chronicle, which describes it as one of the 13 "dynastic castles" built in the 13th century by the Gungthang king *Khri-rgyal'Bum-lde mgon* (1253-1280).

Ramble (1987) refers to the fact that the Se-skad speaking population of northern Baragaun equate Mukha with Dzar and Dzong. Current research will adress the question of how far the place names employed correspond to actual settlement/castle sites.

1.1. Sites of castles and/or castle-like construktions

During this year's fieldwork in the area under investigation the following fortress ruins were located:

1. Garab Dzong (Sumbo Garabdzong/ dga'-rab rdzong), main fortress of the local kingdom of Sum (Ramble and Vinding 1987);
2. A castle-like group of buildings above Kunglithing;
3. Lubra, observation tower/fortress (+garrison) on the north face above the settlement.
4. Dankardzong, a large fortress on the hogback, north-west of the recent settlement "Dankardzon";
5. A large fortress above Pikling (Nepal: Paklin);
6. The fortress of Kagbeni;
7. An observation tower on the cliff above derelict Phutseling;
8. The large fortress of Kalon, east of Khyinga;
9. The fortress of Dzong
10. The fortress of Dzar/Jharkot;
11. An observation tower on the hillock north of Jharkot (above the cave systems);
12. An observation tower on the eastern flank of derelict Newa, west of Dzong.

Map 1 shows the castles and castle-like ruins mapped during fieldwork 1993.

1.2 Possible functions of castles based on previous studies using historical texts (Schuh 1993; Everding 1993).

Apparently the many castles/castle-like buildings serve (apart from representation) to control access to valleys and so the protection of local dutchies from hostilities as well as customs and tax revenue from transmitting trade caravans.

Examination of all existing castle ruins of southern Mustang and mapping of the angles of sight revealed that just these roads could be observed by neighbouring local duchies or kingdoms up to the passes and down the river valleys (cf. map 2). Next to trade troup movements, in particular, could be observed early. Jackson (1978), for example, mentions the dispatch of an army from Gung-thang in 1252

with the aim of subjugating the Jumla empire and its vassals, Lo and Serib.

He also refers to the erection of one of the 13 dynastic castles in Mu-khun (cf. Chapter 1) and the appointment of Tibetan noblemen by the Gung-thang king as castle masters to control the area. It is interesting that the inhabitants of the upper Muktinath valley call themselves "Thakuris", obviously resulting from their knowledge of their "Thakuri" history.

Internal disputes within the Lo empire, such as the one between the king of Lo and his minister in Dzon, also caused armed conflict. 1652 is mentioned as the year of the dispute. Jumla joined in the minister's side and the prince of Lo was incarserated in Kagbeni (Jackson 1978; Ramble and Vinding 1987).

In *Geschichte des südlichen Mustang und der Burgen des Muktinath-Tales,* Schuh (1992) describes the rights to levy customs duties (jagat) granted to the castle masters of Jharkot [Dzar] Topal Bista, the Barhagau [Baragaon] areas, Nar [Nar], and Manang [Manang]. These and other rights are allocated to the Nepalese king Ranbahadur Saha (1778-1799).

Customs collected by Chyakpol (*phyag-phul*) on commodities of traders in transit are mentioned for the year 1790. Custom duties were obviously levied by the Kagbeni fortress. this explains the interest which various small kingdoms showed for his strategically and materially important station.

In 1790 the right to these duties which previously belonged to the king of Jumla were transferred to the king of Mustang. The publications of Jackson (1978), Ramble and Vinding (1987) and Schuh (1992) show that the castle masters of the Muktinath valley were allied with the king of Mustang. It was their responsibility to allocate these duties to the court in Lo Mantang.

As part of the organisation of spatial domination in southern Mustang, especially in the Muktinath Valley, the castle system secured the geographical space, which was accessible through an extensive road network (Graafen and Seeber 1993), from expansive neighbouring local dukes. In addition the presence of a number of vassals residing in castles secured the continuity of revenue from tax and custom duties for the governing administration.

2. Functional differentiation of the castles found

1. The castles ruins of Garabdzong, Dankardzong, and Piklin can be characterised as refuge castles. They were in all probability employed in times of war by neighbouring villagers as protection against encroachments.

First estimates of the number of buildings allow the conclusion that the population of several villages used the refuge castles in times of danger respectively political instability.

However, this presumes that arrangements were made between villages, which still remains to be proved.

Knowledge of the existence of a subterranean supply of drinking water within the castles (Garabdzong, Jharkot) proves that the castles were intended for long-term use. Without the existence such a supply, a long-term settlement (which the nature of the domestic and defensive buildings indicate these places here) would not have been possible.

The existence of refuge castles allowed defence against aggressors, the existence of weapons,

guns, swords, etc., in Thini bear witness to this. For this reason the term defence castle would also be applicable.

2. The most prominent type of castle, next to that above mentioned, represented by the many tower-like ruins with up to 3 storeys in the periphery of villages (Lubra, Phutselin). They are all placed on strategically favourable elevations and enable a view of surrounding roads, such that the phrase observation tower seems appropriate. The towers are constructed so as to allow the accomodation of soldiers/troops in times of war.

During the investigations it was noticeable that from any one of these towers one or several other towers on the other side of the valley or within the Kali Gandaki valley were visible, even today. Communication between them regarding trade, troops and, to a lesser extent, pilgrim movements is thus possible. Photographs from various perspectives show that direct sight between castles was and is possible.

3. The collection of buildings in Dzong and Jharkot can be regarded as fortresses proper. They were erected on the ridge of hills on both sides of the valley. From towers integrated into the fortresses observations of the road system (passes, roads, river valley) and other fortress constructions were possible.

The location of the fortresses in relation to the actual settlements indicated the prior establishment of the former. This will require confirmation dendrochronological tests.

4. With reference to the complex of ruins in Kagbeni these emerges a fourth type. First datings (Gutschow/Schmidt 1993) indicate the establishment of the fortress before the settlement. The geo-strategic location (in a tapering part of the Kali Gandaki) allowed the control of this main trade route to which there was no alternative (except the very time-consuming detour through the Muktinath Valley, via the path from Dzong over the pass to Tanbe). Therefore this bastion enabled the levying of duties and taxes on commodities and transport animals. The internal structure of the fortress consists of several small narrow rooms which indicates its usage as a "palace".
Hence the Kagbeni fortress combined domestic, protective, representational and control (taxes, customs duties) function.

3. Possible forms of inter-castle communication

It is probable that bronze mirrors were used for long-distance communication given that approximately 230-245 days a year have sun. Such a mirror has been found in central Tibet (Ronge/Ronge/Hüttel 1990). This hypothesis has been strengthened by a further mirror finding during an excavation by Hüttel in the abandoned settlement of Kalon (near Khyinga).
This second mirror (Fig. 1) is made of a bronze disc with two reflecting sides. The inner side of the mirror is concave while the outer is convex. The patina is light and bronze-coloured on both sides. The form is similar to the central Tibetan bronze mirror originating in the Han dynasty (1st century B.C. to 1st century A.C.), according to Ronge/Ronge/ Hüttel (1990). Possibly the aesthetic criteria for manufacturing the Kalong mirror have been imported and received from China, probably via Tibet.

Red colour traces on the surfaces, aimilar to those found on the Tibetan mirror, and the remains of some red cloth indicate a gold foil coating which would be suitable for signal

transmission.

The position of the mirror finding (see map) is the third and therefore oldest settlement stratum of the abandoned settlement of Kalong, approximately datable to the 11th to the 13th century[1]. However, this does not exclude the possibility of its origin being much older. Rather it allows the interpretation of trade activities or religiously inspired commodity movements prior to the 11th century. Hoffmann (1967), for instance, refers to mirrors as attributes of the Bon religion and shamanism. At any rate, further intensive research is required before any conclusions can be reached about the population's religion at the time of the third settlement stratum.

Experiments with glass mirrors in spring 1993 enhance the supposition of this form of communication in the past. At night signalling with fire was possible. However, this statement is still speculative as access to the present area of investigation was almost impossible at night. But it can be presumed that observation towers were occupied around the clock in wartime.

During inspection of the ruins several wooden samples were collected. Thanks to the dendrochronological examinations (Schmidt, B. 1992/2)[2] a first estimate can be given of the timber and thus of the beginning of construction. Probable dates when castle construction was started:

Garabdzong	second third of 16th century
Kagbeni	second half of 16th century
Dzar/Jharkot	early 17th century
Dzong	early 17th century
Dankardzong	early 17th century

Map 2 shows the castle ruins located so far, their type and angles of view.

4. Description of some of the castle-like constructions in the area under investigation

1. Dankardzong

North-northwest, but within the boundaries of the Dankardzong settlement there is a refuge castle on a rock with the same name (hogback of metamorphously impressed marine sediment).

The castle ruin belongs to the refuge castle type, is 35 metres long and lies on the north-south axixs. An observation tower must have been situated at the southern part of the village. From here the Lubra and Dzong fortresses and the observation tower on the rockface opposite Jharkot are visible (map 2/3).

Beneath the village's southern part there is an artificial cave.

According to informants from Dankardzong, women and children from the surrounding villages found sheltered here during the wars against Jumla empire. A leather sandal was recovered from within the cave. Samples from the existing strata are presently being radiocarbon dated.

A path from the derelict village leads through further derelict villages on the eastern rockface. Many foundation walls are still visible. The path continues through River valley/ravine to present-day Dankardzong.

Dankardzong translates as "fortress on the rock" which also indicates the existence of the ancient

refuge castle.

2. Kunglithing

On the Road from Jomsom in the direction of Kagbeni, on the left bank of the Kali Gandaki, about 2km from Old Jomsom. The derelict village covers the entire north face. Several foundations of strong quarry-stone masonry cover the whole face. On the plateau-like ridge there are foundation walls of a large building containing several rooms. In the settlement's lower part there is an orchard (peaches/apricots).

On the western side of the village three quite well-kept pottery stoves were located. No timber was found (apparently exploited by later generations), which renders dating of the settlement difficult. A path leads from the upper area of the settlement down to the river valley/ ravine and along the river to the coppice of the Thini settlement; nowadays this is exploited by the inhabitants of Jomsom also. The woods around Kunglithing are designated in the following fashion: Kunglirika (forest on the goatwall/ informants from Thini) and Jabsorika (forest on the mountain side/informants from Kagbeni).

3. Garabdzong (Sombu garab Dzong / dga'-rab rdzon)

This derelict village is a defensive and refuge castle of considerable size. It is placed on a hillock of jutting slate, isolated by the river valley and erosion gullys and ravines. The highest and central point is littered with the remains of a Chorten (buddh. trailmarker). Dendrochronological analyses point to the second third of the 16th century. The ground-plan of the settlement is elliptical and littered with more than 50 ruins of domestic buildings.

A central gateway leads from the south via a small plateau to the hillock, lined with three Chorten. This is probably the only entrance to the village. A number of relicts on the north face indicate that one could get to the southern gate by going beneath the fortress wall. From the castle hill one can oversee the Kali Gandaki Valley with its trade and pilgrimage routes to the south of Syang, where nowadays the airstrip is situated, and into the Langbo Kyun valley, in other words one can oversee the road to and from the Mesokanto pass/Manang.

Notes

1. I owe this information and a drawing of the site to the leader of the excavation, Dr. Hüttel of the DAI in Bonn, for which I would like to express my gratitude.

2. The more exact datings are discussed by B. Schmidt (University of Cologne) in this volume.

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Civic Authority and Agrarian Management in Southern Mustang

Remarks on a nineteenth century land tax register from Kagbeni

— Charles Ramble

1.1. Introduction

Settlements in Southern Mustang, as indeed in many other places, feature intricate connections between agrarian practices, internal political organisation and local ritual. In many communities these connections have been largely obliterated by nationwide political changes, and it is not always clear how the various domains overlapped.

In an article that appeared in a recent issue of Ancient Nepal, the geographer Perdita Pohle addresses a range of subjects relating to the settlement geography of Kagbeni, in Southern Mustang (Pohle 1993). A part of the material contained in this study has been distilled into the form of a land use map. The present article may be regarded as a further comment to this map insofar as it examines the historical relationship between agriculture and polity that prevailed until the time of the cadastral survey.

The historical perspective is possible thanks to the existence of documentary material that reveals something of the state of affairs prevailing in the eighteenth and nineteenth centuries, before living memory. The document that will form the basis of the present study is the land-tax register of Kag, henceforth referred to as KSM (for *bKag sa-'gro ma-yig*). Texts of this nature are rarely explicit about the overall situation. The KSM, being a sort of *aide-mémoire*, is completely silent concerning the organisation surrounding the obligations of the households that it lists. This has had to be reconstructed as far as possible by inference and from the recollections of elderly individuals.

In conformity with the dual character of the

material, the present article will be divided into two parts. The first will summarise the content of the KSM. An analysis of the tax obligations for different periods will make it possible to estimate the overall seed capacity — and to a certain extent the agricultural productivity — of Kag for the four different periods that are covered by the KSM. The document also provides fragmentary information on categories of landholding households and communally-held fields that are liable to special forms of taxation. The second part will present a broader picture of the social organisation surrounding the payment of land taxes. As stated earlier, there is much that is not contained in the KSM, presumably on the grounds that such things were widely enough known not to need to be committed to writing. The most obvious lacuna of this sort is the nature of the six sectors (*tshogs*) into which the tax-paying households are grouped. Particular attention will be given to those sectors which are concerned with the management of cultivated land. Finally, an examination of the six sectors will make it possible to understand the structure of local authority in Kag and to draw some limited comparisons with systems of headmanship in neighbouring communities of Baragaon and Panchgaon.

1.2. Structure and dates of the KSM

The KSM consists of several booklets formed by sheets of paper being sewn together in the centre and folded along a horizontal axis. Many pages have become detached, and some appear to be missing, with the result that the sequence is not always obvious.

The text, photographed by Prof. D. Schuh in 1989, consists of four main sections. Each section lists all the households in Kag, identifying them by the name of the principal householder. Each household is followed by a figure stating the seed capacity of the land attached to it. The way in which tax liability is assessed on the basis of this seed capacity will be discussed presently.

The four sections will be designated simply A, B, C and D. The years by which they are identified are respectively: Wood Dragon, Water Dog and Earth Serpent and Wood Rat. Since the sections are (or have disintegrated into) separate compilations, with no physical features to suggest a sequence, there are few clues as to their temporal order. A few words may be said about the reasoning whereby a likely sequence for these dates has been established. There are in fact two distinct problems: first, that of getting the four entries in the correct order, and second, identifying the sixty-year calendrical cycle within which they fall.

We are greatly helped in the this task by the fact that one of the four entries, made on the 25th day of the 10th month in a Wood Rat year, includes the day of the week, a Wednesday. The tables published in D. Schuh's study of the Tibetan calendar inform us that the 25th day of the 10th month fell on a Wednesday in the Wood Rat (fifty-eighth) Year of the 14th *rab-'byung*, that is, 1864 (Schuh 1973: 212).

This conclusion is supported by the identification of one of the householders named in the entry as belonging to the third ascending generation of a villager who is now in his sixties. The ancestor is the celebrated Headman Daro (rGan-pa Dar-

po), whose story is related below. If we take thirty years to be a reasonable age for paternity, then rGan-pa Dar-po would have been born about 1840.

Having identified the date of one of the entries with a reasonable degree of confidence, we may turn to the second problem: the matter of arranging the other entries around it in the correct order. Since no days of the week are given to facilitate the task, the only possible means is to compare the frequency with which the same names appear in the different entries. The dating may be carried out according to the following steps (bearing in mind that the reliability of this method of dating is inherently limited by the fact that individuals who do not overlap in time may have the same names).

1. It is tempting to suppose that sections B (Water Dog) and C (Earth Serpent) fall on either side of section D (Water Rat), since a Water Rat year intervenes between them. However, this possibility must be discounted. Sections B and C are certainly close together, separated by just seven years, since the majority of names in each case are the same, and with the same, or similar, tax liabilities. The reason why it may have been necessary to review the register after such a brief interval will be discussed below. If section D represented an intervening year we would expect at least as great a degree of coincidence of names between it and sections B and C. But there is no such coincidence. Section D therefore does not fall between sections B and C.

2. There are nine names which occur in both C and B that also occur in A, but not in section D. This strongly suggests that section A is closer in time to C and B than to D. This may be confirmed by the following observation:

3. Three names appear in section D that also appear in both C and B but not in A.

4. Two names appear in section D that are in C but not in B. (A third, counted in no. 2 above, occurs in both C and B; however, whereas the seed capacity of this household is the same in C and D, it is slightly different in B. This suggests that D and C are closer in time than D and B. Since we know for certain that C is only seven years later than B, B and C are likely to be earlier than D.

5. One name occurs in both A and B that is not found in C. The occurrence of a single name is by itself admittedly flimsy evidence for the greater antiquity of section A. The latter could theoretically be situated between C (Earth Serpent) and D (Wood Rat), since a Wood Dragon year does in fact intervene. If A fell between C and D, it would be twenty years earlier than D and thirty-five years later than C, and we would therefore expect a greater correspondence of names between A and D than between C and A. However, as we have seen in nos. 1 and 2, this is clearly not the case.

Thus the dates for the four sections suggested by the evidence above could be:

A Wood Dragon — 1784
B Water Dog — 1802
C Earth Serpent — 1809
D Wood Rat — 1864

It might be objected that the reappearance of the

same individuals in an entry for 1802 and for 1864 is an unlikely thing. As a general rule, a man "retires" from his position as head of household when his son is old enough to assume the responsibility, usually at the age of around thirty. The most likely explanation for the same individual being named as the head of his household over an abnormally long period is either that he had no heir-apparent, or, as sometimes happens, the son was considered to be incompetent. He would therefore continue to be listed as the household head until his death. One of the five people who are named in both D and B is a certain rGan-pa Ratna. In his case, the fact that he is named as the head of his household when he must have been well past the normal retirement age could be precisely because he was headman. As we shall see below, there was a period in Kag's history when headmanship was a lifelong office, and Ratna's household may have continued to be identified by his name even after he had effectively withdrawn from its running.

The longevity of certain names can also be explained by the likelihood that the people in question were unmarried religious practitioners or women whose siblings (or spouses) might have died before ensuring a succession. The nine names that recur in groups C, A and B include Jo-mo ("the nun" bSod-nams; sGrub-pa-mo ("the woman meditator") Tshe-dbang bzang-mo; sGrub-pa-mo Khya-mo,[1] and dKa'-bcu Srid-dar mi-'joms (*dKa'-bcu* is a monastic grade between *dge-slong* and *dge-bshes*).[2]

1.3. Household groupings and tax liabilities

Rather than to present a translation of the KSM, something that would make for tedious reading, the salient features of the document may be summarised and discussed.

As stated above, the KSM comprises four main sections, each listing all the tax-paying households in Kag. In each case, the households are not presented in a single sequence but in six sectors (*tshogs*). The significance of these sectors, and their relationship to the political organisation of Kag, will be discussed below. For now, it will suffice merely to list their names. They are:

Tshe-bcu dpal-gtor-ba
Tshe-bcu 'dzing-chang-ba
Tshe-bcu bu-tsha-ba
Tshe-bcu yur-chang-ba
Tshe-bcu dge-rtsa-ba
Tshe-bcu lam-bcos-pa

Following the roll of households by sector the KSM gives a list of subsidiary households (*kha-'thor*). All "full" households (*grong-ba*) in Kag belong to one or another of the six sectors. One household cannot be in two separate sectors. However, in several cases the same householder is listed in two different sectors, a fact which requires some explanation.

The possibility that there may be several individuals of the same name in a given year may be discounted, since documents such as the KSM avoid ambiguity by adding some distinguishing epithet. For example, in the entries for the Bu-tsha-ba sector in section D we find a

certain g.Yung-drung che-ba ("Yungdrung the elder"), who is distinguished by his seniority from g.Yung-drung chung-ba ("Yungdrung the younger") listed in the dPal-gtor-ba sector. g.Yung-drung chung-ba is also listed in the 'Dzing-chang-ba sector, together with someone designated simply as g.Yung-drung, who, from the context, we may safely assume is g.Yung-drung che-ba. Both the g.Yung-drungs are to be distingished from g.Yung-drung rnam-rgyal of the Lam-bcos-pa sector. In another case, we find that membership of a particular sector is the feature that distinguishes between two namesakes. The Lam-bcos-pa and Yur-chang-ba sectors in section A each include a householder called Dus-ston; in this case, confusion is avoided by the simple expedient of designating them respectively "Dus-ston of the Lam-bcos-pa" and "Dus-ston of the Yur-chang-ba".

The appearance of a single householder in two sectors is explained by the fact that one person may inherit two households. Such cases are relatively common throughout Baragaon even today. If a man has no children, as long as he has close relatives (especially patrilineal kin), rather than adopt a successor he will simply bequeath his house and land to a brother or cousin, whose household may belong to a different sector from his own. The inheritor will then probably allocate his two households to two different sons in the next generation. Inheriting two houses in different sectors obliges the owner to fulfil the duties required of householders by both these sectors (the nature of these duties will be discussed presently).

Obviously, the two households that a man might inherit need not be in different sectors. Several entries in the KSM state explicitly that a single person has two households and that he is responsible for paying land tax on both. In these cases the liability of each household is not given separately, but the overall seed capacity is stated.

The seed capacity of each household is expressed in terms of *'bo-khal* and *zo-ba* of six-row barley (*nas*). Twenty *zo-ba* equal one *'bo-khal*. The *zo-ba* is equal to half a Nepalese *pathi*.[3] Another unit that occasionally appears is the *se-khal*, equal to thirty *zo-ba*. It is worth noting that the KSM uses no units smaller than the *zo-ba*. In just two instances a half-*zo-ba* is specified. This contrasts with the land-tax register of Lubra, which frequently prescribes *drudra* (*'bru-dra*? Equal to a quarter of a *zo-ba*) and half-*drudra*.

The ratio of seed-capacity to tax varies from village to village. In Kag the tax payable is 10 per cent of the seed-capacity, something that is not actually stated in the KSM. The variations are only partly explicable in terms of differing productivity. The land tax in Chongkhor is also 10 per cent of a household's seed capacity, but because of the higher altitude of this settlement, crop yields are proportionately lower than in Kag. In Chongkhor, the seed-to-yield ratio (*skor-thang*) for six-row barley is 1:7 (*bdun-skor*), and in Kag it is about 1:9 (*dgu-skor*), occasionally somewhat higher.[4] To my knowledge, there are only three villages which have a significantly greater seed-to-yield ratio than Kag. These are Tangkya, Dri and Surkhang, the only settlements in eastern Lo to cultivate barley rather than wheat (although a

few fields of barley are also planted in Yara). One householder in Surkhang claimed that he obtained a yield of 297 *pathi* for 20 *pathi* planted, a ratio of nearly 1:15. Yields in Dri were said to be even higher. The reason for this apparent fecundity seems to be a difference in the technique of planting. Seed barley in Baragaon is broadcast, and a certain proportion is lost to birds. In eastern Lo, barley is sown by pushing a stake into the earth at intervals and dropping three to five grains into the hole. This painstaking technique is said to be obligatory in the area to protect the seed from possible frosts and also from the depredations of red-billed choughs, which are abundant in the area.

The main features of the KSM are perhaps best expressed in tabular form. (See tables at the end of this article). Table 1 represents a summary of the four sections, displaying the number of households for each of the six sectors, the seed capacity of each sector and the total seed capacity of Kag. Since the KSM is damaged or illegible in several places, the figures for seed capacity and even the number of households are occasionally uncertain. The similarities between sections C and B have to a certain extent made it possible to overcome lacunae in one section by inference from the other. In other places, the missing numbers have been provided by estimating from the context. Whatever the case, the figures for seed capacity are probably accurate to within a few *'bo-khal*. Quantities are given in *'bo-khal* (b) and *zo-ba* (z). Note that the number of subsidiary households (*kha-'thor*) is bracketed because they are not included in the total number of households (*grong-pa*) for each section.

These figures enable us to make certain observations about Kag's cultivated land. First, the annual yield for the cultivable land listed in the KSM may be estimated as follows, assuming a seed-to-yield ratio of 1:9:

A 14,676 *pathi*
B 12,818 *pathi*[5]
C 12,838 pathi
D 13,302 *pathi*

These figures are of course ideal, and do not account for attrition by rodents, caterpillars, disease and so forth.

Secondly, a few words may be said about the relationship between seed capacity and land area. As stated above, field size is locally reckoned not in terms of square units but the volume of seed it can sustain. Nevertheless, an approximate correspondence may be established between the two systems of assessment. A seed capacity of one *pathi* seems to correspond roughly with an area of one *ropani*, that is, 516 square metres. For the sake of convenience this equivalence will be retained in the following calculations.

The seed capacity of Kag's cultivable land, according to the most recent entry in the KSM, is approximately 147 *'bo-khal* 16 *zo-ba*, or 1478 *pathi*. This seed capacity implies a cultivable area of 147.8 *ropani*, or 7.6 ha. Pohle's analysis of Kag's territory, based on cadastral data, concludes that the village has a cultivable area of approximately 35.5 ha. — between four and five times more than the figure suggested by the KSM (Pohle 1993: 16).

Some of the possible reasons for this discrepancy

may be discussed. An important point to be noted is that the KSM only specifies the seed capacity of taxable fields. There were various categories of fields which were not subject to taxation. Non-taxable land in the past would have included the following three categories:

1. Communal fields (*"pishing"*: *spyi-zhing*) corporately owned by the households of each of the six sectors. The various obligations of the sectors were financed with revenue from these fields. There appears to have been no fixed percentage that had to be paid by the lessee. He would make a flat offer of how much grain he was willing to pay to the lessor sector, based roughly on an assessment of seed capacity, and the sector would accept or reject his offer.

2. Monastic land (*chos-zhing*): fields are leased out to volunteers who provide their own seed and labour and pay a percentage of the yield to the monastery.

3. Fields from which the revenue was committed to the sponsorship of certain ceremonies. The system still exists in neighbouring villages. For example, the register of temple contributions from Lubra includes one ceremony which is entirely subsidised by part of the yield from seven named fields belonging to six households (see Ramble 1984: 302). In such cases the tax is referred to not as *sa-'gro* but as *zhing-rgyab*. The KSM uses the term *zhing-thob* (see also *zhing-thog* in discussion of dByar-ston fields below).

The only instance contained in the KSM of revenue other than normal land tax is an entry made in a Wood Rat Year. Only four names are mentioned, and these make it clear that the year in question is not the same as that of section D (1864) but 1804, since they appear in the list of names for both section B (1802) and section C (1809). The passage concerns a number of fields referred to as the dByar-ston fields, and specifies not the seed capacity of the land but the quantity of grain to be paid as a lessor's fee (*thog*). Each of the four people named is required to pay 2 *'bo-khal* and 5 *zo-ba* of barley. According to normal practice in Baragaon, the fee for leased fields is 50 per cent of the yield or — as appears to be the case here — the probable yield estimated on the basis of seed capacity. (The lessor provides his own seed and labour.)

Assuming that 2 *'bo-khal* 5 *zo-ba* represents 50 per cent of the yield of each, the overall yield for the four would have been 18 *'bo-khal*. Since the seed-to-yield ratio for Kag's fields is about 1:9, we can draw the tentative conclusion that the dByar-ston fields must have had a seed capacity of 2 *'bo-khal* — in other words, two *ropani* (over 1000 square metres) of field area.

The yield was not committed to the funding of a religious ceremony but to constitute the annual salary of a public servant:

> All the grain fee should be paid to the black-smith at the stewards' office, 2 *'bo-khal* and 5 *zo-ba* from each of the lessors.

The entry continues with two clauses, intended respectively to protect the blacksmith from being cheated of his due and to assure the lessors — people who lease public land are themselves usually indigent — of their continuing usufruct of

the dB振-ston fields.

> If there are even a few grains of inferior barley [*bso-ma*] mixed in with the superior barley [*nas*],[6] [the blacksmith] shall receive 2.5 *'bo-khal* of grain [i.e. an additional 5 *zo-ba*]. Neither may villagers seize the fields [from the present lessors], nor may those who plant the fields abandon them.

> Zhing tnog tshang [btsang] ma gnyer tshang du ser bzo ba'i [zo'i] 'bo [bo] khal gnyis dang zo ba lnga lnga 'debs ['dabs] rgyu [gyu] / gal [ga] srid nas la *bso ba* re re 'dre [gres] ba byung ['byung] na / 'bo [bo] khal phyed dang gsum len rgyu [gyu] chod [mchod] / zhing yul pas [ba'i] yang 'phrog [khrog] sa med / zhing 'debs [stabs] mi rnams {gyi} kyang 'grim [grim] sa med pa chod[7]

4. It is possible that land belonging to the nobility was not taxed. A significant feature of the KSM is that the lists of householders contain no names prefixed by the title *sras-po* or *dpon-po*, "Noble". This probably cannot be attributed to a simple omission of the title by the scribe, since official documents from the area are normally meticulous about observing this protocol. If this is the case, it is likely that a considerable area of private agricultural land is simply not included in the KSM. However, a clue to the amount in question may be obtained from present day noble landholdings — in other words, the area of fields that have been officially registered under the name Thakuri. The relevant data from the Jomsom Land Tax Office suggests that this represents approximately 15-20 per cent of Kag's registered cultivated land.[8]

In addition to these categories it is likely also that land owned by the subbas was not liable to taxation. The KSM does in fact mention a dispute concerning revenue from a subba's field not having been paid to its absentee owner, but the passage is too confused to merit close analysis. The point is that the revenue from such fields would not have been paid to Kag's granary, and they would therefore not figure in the KSM.

It is possible that at least a part of the land that was previously classified as *spyi-zhing* has been converted to what is now known as village *guthi*, a category accounting for approximately 1.4 ha. of land in Kag. Unfortunately, inquiries have not yielded any documents contemporary with the KSM indicating how much *spyi-zhing* land was exempt from ordinary taxation. It is certainly likely that such a document does, or at least did, exist. Lubra, for example, has a text entitled the *sPyi-zhing sa-'gro ma-yig*, the land tax register for communal fields, which lists different areas of cultivable land that are not eligible for normal taxation, specifying the purpose for which their revenue is to be used.

The monastic community is said to possess a document listing the size of the *chos-zhing* from which it is still entitled to receive revenue. This document was not photographed, but the relevant figure was obtained from the Land Tax Office in Jomsom. According to the office's records, the equivalent of 2.3 ha. of land are registered as Kag monastic *guthi* territory, and 0.4 ha. as *guthi* land of Tiri monastery.[9] This represents 36.8 per cent of the area of Kag's

land that was considered to be taxable in 1864. We do not know how much monastic land there was at this time, or what area of land was occupied by the other non-revenue-paying categories. But whatever the case, it is highly unlikely that it would have equalled the unaccounted-for 27.8 ha. that Pohle's assessment suggests.

The only conclusion that can be drawn, unless the foregoing assessments are wildly inaccurate, is that there was simply less agricultural land in Kag in the nineteenth century. The possibility that new fields may have been broken since this time is supported by the improvement in the irrigation system that has taken place since the compilation of the KSM. Details concerning this improvement will be discussed below.

1.4. Comparing the sections

In view of the considerable lapse of time between sections A and B and between C and D, we may wonder why there is such a short interval between B and C. The answer may be related to the observation that the overall seed capacity for section B is surprisingly low, especially in view of the fact that only seven years separate it from section C. I believe the discrepancy is to be explained by an omission in the text. Among the householders listed in section C is "the steward Karma", whose land has a seed capacity of 14 *'bo-khal*. This is an exceptionally high figure: the average seed capacity for the other households in the sector is slightly over 2 *'bo-khal* and 2 *zo-ba*. The list of householders for the dPal-gtor-ba sector of section B begins with the words: "The great steward sKar..." and breaks off abruptly. The remainder of the line, and the following line, are both left blank. The third line resumes the list with a new name. Now "sKar" is quite probably a misspelling of the first syllable of the name Karma (spelt correctly in section C). The seed capacity of seven of the fifteen households is identical in both C and B, and the majority of others exhibit variations of only a few *zo-ba*. If we assume that the steward Karma's liability in section B was the same as in section C — 14 *zo-ba* — the total seed capacity of the former would be increased to 142 *'bo-khal* 8.5 *zo-ba* — very close to the figure for section C (142 *'bo-khal* 13 *zo-ba*). We can only speculate as to why the steward Karma's seed capacity was left blank. It may be that it was diverted to the sponsorship of a religious ceremony; alternatively, it may be that there was a dispute over the figure that was satisfactorily resolved only seven years later. Rather than merely fill in the blank, the community may have thought it preferable to draw up an entirely new list. Changes in the seed capacity and numbers of other households seem to be insufficiently significant to have merited a complete reassessment.

A comparison between sections C and B on the one hand and section D on the other clearly shows the potential fluidity of land tenure. In the dPal-gtor-ba sector, for example, the number of households is similar (14 in D, 15 in C and B), but the seed capacity of 43 *'bo-khal* 16 *zo-ba* for section C becomes 52 *'bo-khal* 0.5 *zo-ba* in section D. In other cases, the overall landholding of a sector may remain fairly constant, even though the number of households changes: the seed capacity of the dGe-rtsa-ba has diminished from 19 *'bo-khal* 14 *zo-ba* in C to 17 *'bo-khal* 10 *zo-ba* in D, a relatively minor change in view of the fact that the number

of households has fallen from eleven to six (the problems of political organisation arising from this disparity are discussed below). In spite of this inconstancy in land tenure, and the decrease in the number of households, the overall seed capacity of Kag remained stable over this period (an increase of only some 5 *zo-ba*).

The greatest discrepancy is to be found between section C, B and D on the one hand and A on the other. There is evidence to suggest that the considerably greater number of households listed in section A may be the result of a different understanding of what constitutes a household. In Baragaon, a household (*grong-ba*) and its fields are frequently divided and treated as distinct economic units by, say, two brothers or two cousins. Nevertheless, the grong-ba remains the political unit. For example, in the roster of village officials, the *grong-pa* will have to provide just one incumbent in each circuit, and if the *grong-pa* is split, the two component houses will normally alternate in meeting their common obligation. It is probable that section A has listed not just full *grong-pa* but also fractions of *grong-pa*. In some cases, however, although the heads of two fractional households are named, their landholdings are treated as a single unit. For example, we are told at one point in the list for the 'Dzing-chang-ba that the land of "mGon-skyabs and his brother, the two of them together", is assessed as having a seed capacity of 16 *zo-ba*. That both individuals should be cited can be explained most satisfactorily by the likelihood that the KSM is, for this section, using a convention that assesses the seed capacity of fractional houses. It may also be significant that the section lists only three subsidiary households, whereas the others list eleven (C and B) or twelve (D). It may be that certain categories of such households have been listed among the full households in section A.[10]

The greater seed capacity of Kag's land in section A may be the result of two possible factors: first, there may quite simply have been more land which has since been eroded away by the Kali Gandaki, as older villagers claim to be the case; or secondly, certain areas of land may have been transferred to categories that are not covered by the KSM — for example, one or more sizable donations to the monastery.[11] It is likely that a combination of both these processes has been responsible for the diminution of taxable land in Kag.

The KSM also contains two entries concerning the settlement known as Yule (spelt dByu-le or dByu-li in the KSM),[12] which lies south of Kagbeni on the right (west) bank of the Kali Gandaki. Informants in Kag maintained that Yule was first settled by two noblemen, sKu-zhabs dGra-'jom, the grandfather of the present Sraspo dBang-rgyal, and sKu-zhabs sTag-la dbang-rgyal, the grandfather of the present Padma snying-po. However, the KSM suggests that this area was under cultivation, if not actually settled, more than two generations ago.

The two entries list the seed capacity of Kagpas who held land in Yule. The tax was presumably to be paid to the Kag treasury, since Yule lies in the latter's territory, and to judge from the list, all the landholders are from Kag. (This is now no longer the case, since all the land has been sold to non-Kagpas. The residents of Yule are from Te, and most of the remaining land is owned by residents of nearby Pagling.)

Neither entry is dated, but the approximate period of each can be established satisfactorily by comparing the names in the lists with those in dated passages of the KSM. Almost all the nineteen names in one of the lists (Yule A) coincide with those in the entries for sections B and C; almost all the twenty-three names in the other (Yule B) correspond to householders listed in section D (included among them the Headmen Dar-po and Ratna).

The overall seed capacity for Yule A is 37 *'bo-khal* 8.5 *zo-ba*, while that for Yule B is 38 *'bo-khal* 2 *zo-ba*. The larger number of landholders and greater seed capacity in Yule B suggests that new fields were broken in the interim. This observation also confirms that sections C and B are indeed later than section D. Moreover, the absence of any mention of Yule in the KSM prior to a period contemporary with section B implies that the first fields were broken — or at least became eligible for taxation — around the first decade of the nineteenth century, and that section A does predate B.

C and D. The system of irrigation for the Yule fields is discussed below in the context of the Yur-chang-ba sector.

2. The six sectors

The six sectors into which the households of Kag are grouped are characterised by certain religious or secular services to the community as a whole. A brief description of these responsibilities may be given.

2.1. The Yur-chang-ba'i tshogs

Literally, the "group of irrigation-channel people", this sector was responsible for providing beer and food for those involved in the annual restoration of Kag's principal watercourses. All Kag's water comes from the Dzong Khola before being distributed along three arterial canals. The first replenishes the reservoir on the southern side of the Dzong Khola, and the water is subsequently released into the area of fields known as Khalung. An important subsidiary channel should be mentioned: this is called Shang, a branch which splits off from the first and serves the area known as Bowa. The second, which leaves the Dzong Khola at a site called Darkyang, irrigates the Shon fields on the northern bank of the river, and the third, which runs through the middle of the town and drives a series of water mills, feeds the Shung fields on the alluvial fan south of Kag.

As in neighbouring settlements, access to water is based on an irrigation roster (*'chu-re*). The way in which the order of access to water is established varies from one settlement to another. In Chongkhor, the villagers' fields are divided into two groups, each with its own water source. During cultivation of the fields for the first crop of the year, the sequence for one group of fields will follow the order of the *houses,* which are numbered from 1 to 32, while the reverse order pertains for the other group of fields. When irrigation is taking place for the second annual crop, the sequence is simply reversed for each group of fields. In Lubra, the order of access to water is established twice a year — once for the wheat crop and once for the buckwheat — by drawing lots among the householders. The order of access to water is

thus based on a sequence of households, irrespective of the geographical location of their fields. This variant of the *'chu-re* is called *sgo-rim*, or "door-to-door", in which "door" is metonymic for a household.

The system that prevails in Kag is referred to as *su-mgyogs-mgyogs*, "whoever is quickest", since that is essentially how the order is established. During the night a householder may leave a small pile of stones at the open sluice of the irrigation canal, and return home through the village, announcing in a loud voice that he is the next in line. When dawn breaks he will be entitled to divert the water to his own fields. Such a system can clearly only operate in a situation where water is relatively plentiful, and it does not much matter when one's turn comes. This is the case with Kag. The fact that there are three irrigation canals with abundant water means that Kag's fields can be irrigated in the space of just thirteen days, whereas other settlements require much more time. A first-come-first-served principle is therefore suitable to Kag, since it is not likely to lead to acrimony over access to water.

The present system has not always obtained in Kag. There have been at least two changes in living memory. Both preceding systems involved a circuit known as *rka-rim*, "sluice sequence". Now the "door-to-door" (*sgo-rim*) roster that we have encountered above means that an individual may irrigate all the fields belonging to him in the vicinity of the channel to which he has been allowed access for the day, even though these fields are not necessarily contiguous. The "sluice sequence", however, means that access to water follows the order of the sluices (*rka*) disposed along the irrigation canal, irrespective of the ownership of the the fields onto which these sluices open. Since this procedure meant that householders were obliged to close and open their sluices with annoying frequency, a modification was made in the system. This consisted of employing two people, designated as *chuma* (probably *'chu-ma*, "irrigators"), whose duty it was to work the sluices. For this service they were entitled to receive one *zo-ba* of barley per field, and 2 *zo-ba* for those fields containing *btsag-rdo*, the white stones that signify the presence of a serpent spirit (*klu*). In practice, householders place *btsag-rdo* only in their largest fields.

Perhaps because of an unwillingness on the part of the villagers to pay the *chuma*'s fee, this system was abandoned in favour of the *su-mgyogs-mgyogs* practice. Another factor that may have precipitated the change is the improvement of Kag's irrigation system, a subject we shall return to presently. While the *rka-rim* system was in operation, a rather different principle applied for the fields that were irrigated from the reservoir (the areas known as Rerag, Thana, Bowa, Shang and Khalung). In this case the householders concerned would cast lots on *each day* of the period during which irrigation was to take place for both the buckwheat and barley crops. The casting of lots took place at three different locations: on the first day at Thana; on the second at Ara, said to denote the covered passage to the east of the ruined castle;[13] and on the third day at Darkyang (mDa'-rkyang), literally "arrow ground", a flat area at the north-western end of the town, where archery contests are said to have been held. On the

fourth day the sequence would recommence at Thana.

In the light of these relatively recent modifications in Kag's irrigation system, it is interesting to observe that precisely the reverse of these changes is prescribed in the KSM in the last century. The entry was written in a Water Snake Year (1833? 1893?):

Following a discussion among the people of Kag, who are led by the Headmen Ratna and Dar-po: even though it was, in the distant past, customary for people who took turns for the irrigation to [establish the order by] casting lots [this practice has been discontinued]. But because people are afraid of their souls being carried off and their lives endangered, there are some who do not even get one turn for irrigation[14] and others get two. Because of this, following a discussion among the people of Kag, we have [reverted to] casting lots.[15] For the four cultivated areas of Kag, five including Yule, [the order of irrigation shall be as follows].

— For Shang: [the circuit shall move] southwards, starting from the top and going downhill;[16]

— For Shon: northwards, starting from below and going uphill;

— For Shung: southwards, from the top downhill;

— For Khalong: northwards, from the top moving downhill;

— For Yule: northwards, starting at the top and moving anticlockwise.

No one may say that he hasn't the time [to take his turn]. The time when water may first be channelled into the fields [each day] shall be the first cock crow.[17]

If the [water] with which the fields are being irrigated should stray [from its proper course during the night and risk damaging other fields?] [the person responsible] must go out in the middle of the night [and remedy the situation].

After the Khalong fields have been irrigated, any excess water may not be channelled into Bo-ga[18] again.

When you have finished irrigating your field you should call the person after you [to take his turn].

There shall be no theft of water.

If anyone diverges from [the terms of] this document he shall pay a fine of one red [copper?] coin.

[The above?] shall be implemented after the tenth day of the seventh [Tibetan] month, the month of dByar-ston.

rGan [gan] pa ratna [radna] rgan [gan] pa dar gtso [rtsos] ba'i bkag [kag] pa yul pa [ba] bka' [ka'] gros [bros] thog [thogs] nas sngon snga mo chu [chus] sna [rna] zung ba tshos [tsho ba'i] rgyan rgyab [gyab] srol yod kyang [bkyang] / mi bla [sla] 'khyer [khyer] ba tshe nyams [nyam] yong mno (?) [ngags] bsam [sam] dang la la 1 mo 'chu [chus] la la gnyis [snyis] 'chu [cus] ba la rten [sten] bkag [bskags] pa [ba] yul pa [ba] bka' [ka'] gros [bros] thog [thogs] nas chu'i [chub] rgyan [gyan] rgyab [gyab] pa [ba] yin / bkag [skag] tu [du] klungs [slus] bzhi [zhi] / dbyu li lnga

[snga] bo / shang go lhor stangs [stang/stad (unclear)] smad [mad] nas mar (err. for yar?) / zhon byang stangs [thang] smad nas yar / zhung lhor stangs [stang] stod nas mar / kha' long byang stangs [stang] stod nas mar / dbyu li byang stang stod nas g.yas [dbyas] skor [kor] / mis [mi] mi [smi] khom mna' [rna] sa med / klungs [slung] chu [byu] bcug [cugs] na (?) [sna/tha — unclear] mgo [go] la bya skad [gad] dang ma la / klungs [slung] chu [cu] 'grim [brim] na mtshan [tshan] phyed la 'gro [bro] rgyu [gyu] / kha' long bcus [chus] phyin chu lhag [lhags] bo ga la slad [las] te [de] 'chu [cu] sa med / bcus [chus] nas rang gi khyim mtshes [tshe] la brda' [da'] gtong [stang] rgyu [kyu] / chu rku sa med / gal srid chod tshig [tshigs] nas 'gal [gal] phyin chad pa dngul dmar [smar] 1 byung rtog [stogs] len chod pa yin / dbyar ston [stong] zla ba bdun [dun] pa'i tshes 10 'tshugs [tsugs] rgyu [kyu] /

This entry is clearly prescribing a system of priority that is based not on order or households (whether permanently fixed, as in Chongkhor, or established by lot, as in Lubra, but on an order of *fields* according to their geographical location: in other words, a *rka-rim* or "sluice sequence". The aim of casting lots is to establish the starting point and thereby the subsequent sequence of fields that are to benefit from the water. The order laid down in the entry was evidently not meant to be followed in perpetuity but revised each year by casting lots.

The KSM does not tell us about the existing system of irrigation that is to be abandoned, but a clue to its nature is contained in the reasons for its abandonment, namely that "people are afraid of their souls being carried off and their lives endangered", and furthermore because there is an apparent injustice in the system. These features are characteristic of the *su-mgyogs-mgyogs* or "first-come-first-served" regime that is again current in Kag. One of the distinguishing requirements of this system is that householders must go out in the middle of the night to stake their claim to the water. Villagers in Baragaon (and many other places for that matter) are often reluctant to go abroad at night because of the danger of lurking ghosts, demons and various other malevolent nocturnal entities. Secondly, as pointed out earlier, the first-come-first-served principle is really practicable only when there is an adequate water supply. At the time of the KSM there may well not have been. Even now, conflicts over natural resources such as wood, grazing and water can acquire quite dramatic proportions; and this entry almost raises the suspicion that, in the darkened fields of Kagbeni, during the critical period of irrigation, lives really were endangered and perhaps even the occasional soul carried off by some undiscovered agency.

The irrigation canals were traditionally restored on two occasions in the year: in the second month (February/ March) for the barley crop, and in the seventh month (July/ August) for the buckwheat. The work of restoration was performed by everyone between the ages of thirteen and sixty, a category called *lenyi* (*las-nye*?) in Kag.[19] The labour was spread over two days. On the first day the work party would deal with the Shon and on the second with the Shang. Work on the Shung channel, which runs through the centre of the town, was carried out over the same period by married women and older men,

apparently out of courtesy to the latter and convenience to the former, who had their hearths to maintain. The fact that it was predominantly women who worked on Shung is the basis of the nickname of this waterway: Mo-yur, the Female Irrigation Channel.

The Yur-chang-ba households would prepare a quantity of beer made from 2 *zo-ba* of barley (*chang-zo do-ma*), and one small basket (*bagcung*, with a capacity of some six or seven *mana*) of roasted barley (*yos*). The quantities involved were clearly of the order of a snack rather than a feast, sufficient to provide each worker with one or two cupfuls of beer and a handful of grain. The Yur-chang-ba were also responsible for providing fire and juniper incense with which to propitiate the gods at the point where the canal joined the river. In the evening the sector would hold a beer-drinking party for its own members.

Since the dissolution of Kag's sectors, the maintenance of the irrigation channels is no longer a properly communal affair. Instead, fourteen or fifteen young men volunteer for the task and are paid in cash from village funds.

2.2. The 'Dzing-chang-ba tshogs

The maintenance of Kag's reservoir is said to have been carried out once a year, in the second month, at the time the irrigation canals were being prepared for the barley crop. Unfortunately it has not been possible to determine the responsibilities of the 'Dzing-chang sector in this regard — informants' recollections were uncertain -but we may imagine that it was similar to the obligations of the Yur-chang-ba.

Accounts suggest that the annual clearance of the reservoir began with a certain amount of modest revelry between the young men and women of the village. Notably, the soft silt of the dried bed was considered a perfect site for a high-jump contest, with the men competing and the women progressively raising the rope. After the contest a few women would remain at the site to deepen the hollow, carrying the earth to the edges in baskets, while the other young women and the men went off to work on the canals. The preparation of reservoirs in the region not infrequently acquires a festive character. In Te, particularly, the event has acquired the proportions of an annual ceremony, called the Cingsa.

Kag's reservoir is located on the Shang (southern) side of the Dzong Khola. There is some indication that there may also have been a reservoir in Shon, on the right bank. One field in this area bears the name Ngodrup Dzingu (dNgos-grub 'dzing-bu); Ngodrup is likely to be the name of a past owner of the field, while Dzingu suggests that this was the site of a reservoir.

What is certain is that the irrigation system of the Shon fields has undergone changes within living memory. The present Shon irrigation canal, for example, was installed only some fifty years ago. Until then, the lower Shon fields were irrigated by a canal that left the Dzong Khola at a lower, more westerly location than the present junction. The upper fields of Shon were fed by a wooden aqueduct (*wa*) that carried water from the Shang canal, on the left (south) bank of the Dzong Khola, across the river to the right bank. The construction of the Shon canal may have been contemporary with the improvement of the Shang irrigation system, which in places also

The story goes that rGan-pa Dar-po — who is now something of a local folk hero — earned the hostility of the nobles by championing the welfare of the people. After a protracted dispute his rivals succeeded in obtaining a royal seal from the palace in Kathmandu on a forged warrant for his death. The seal was obtained by one Ga-ga ("noblewoman") Phyag-mtshan sgrol-ma, a woman of Kag's ruling Khri-thog-pa lineage and a wife of the ruler in Kathmandu. rGan-pa Dar-po was duly seized and taken to the middle of the bridge that spans the Kali Gandaki west of Kag. His rivals hewed at his neck for a while in an unsuccessful attempt to behead him, until he removed from inside his mouth a protective amulet that he had concealed there. Saying that if people really wanted him dead he would no longer resist, he yielded to his captors, who duly removed his head with a single stroke. The head was then hung under the bridge as a grim warning to any other prospective opponents of the nobility.

If this last detail is true, it undoubtedly indicates a vicious sense of humour on the part of the noble assassins. Not infrequently in Baragaon and Lo one sees goats' heads hanging beneath bridges over streams. The heads belong to goats that have died from a certain variety of madness. It is believed that so suspending the mad goat's head under a bridge will prevent other animals in the herd from falling victim to the same insanity.

The story goes on to relate how justice was finally done when the king of Nepal discovered the subterfuge and summoned the offenders to trial. After passing through a series of lesser courts they found themselves in Tansen, where they all perished from heat and illness. The queen who had stolen the seal was likewise banished from the royal court, and, too ashamed to return to Kag, died somewhere in obscurity.

2.9. The constables of Kag

At the period when the *tshogs* system was in operation there were six constables, one recruited from each of the six sectors, serving by annual rotation. The fact that each sector provided one constable is the source of an alternative name for the office, *tshogs-pa,* that is commonly used instead of *rol-po.* In Panchgaon and the five Shod-yul (the *Se-skad*-speaking villages north of Kagbeni), the usual term for the *rol-po* is *tshowa* (< *tshogs-pa*).

One of the chief tasks of the Kag constables was to guard the fields during the two annual harvests. For the barley harvest, about the middle of June, each constable would appoint an assistant, probably from within his own sector. Although the assistants served for only three days the appointment was made well in advance of the harvest, on the day of the Loyak (*Lo-yag*)[29] ceremony. The six assistants were referred to as the *mi-thus drug-po*.

Kag is reputed to have enjoyed better crop yields than most neighboring settlments, and large numbers of people from the villages in the Muktinath Valley would come to provide labour for the harvest and to glean the fields. The gleaners were known by the somewhat pejorative term *gumbu thukhen*. *Gumbu* (*gong-bu*?) is a local term implying "leftover grain", or "bird-food", and designating the ears of barley that fa to the ground when the stalks have been gr

used to depend on wooden aqueducts for conveying water. In the case of the latter at least the improvments are said to have been financed by Jetha Subba of Thak in collaboration with a Kagpa named Gara. (As Pohle points out, the subba's motives for constructing this channel were probably something other than pure public-spiritedness, since he himself had fields in the area.)

It may be that it was precisely the improvement of the Shon irrigation system that led to the obsolescence of he reservoir, since the water would thenceforth have been abundant enough not to require storage. For the sake of comparison we may point to the extreme contast provided by the settlement of De in eastern Lo: water here is scarce, and *every one* of the thirteen households has its own reservoir. An interesting feature of the situation is that two irrigation rosters are required, one for replenishing the reservoirs and one for watering the fields.

2.3. The dGe-rtsa-ba tshogs

The *dGe-rtsa* (lit. "root of virtue") is a liturgical ceremony that was, and continues to be, held on the fourteenth day of the fourth month (April/ May).[20] The salient feature of the *dGe-rtsa* ceremony is the making of large numbers of clay *tsha-tsha* by a dozen or so monks. The duty of the *dGe-rtsa* sector was to provide food for the monks and oil with which to grease the *tsha-tsha* mould. All the *tsha-tsha* would then be placed on stones beside the principal watercourses, apparently as a measure to prevent the erosion of the fields by the river. The distribution of the *tsha-tsha* was performed by village children, who would be rewarded for their cooperation by having the surplus oil rubbed into their hair.

The *dGe-rtsa-ba* was latterly the smallest of the six sectors, a fact which, as we shall see below, resulted in disputes concerning the administrative system of Kag. Moreover, with a seed capacity of just 6 *zo-ba,* their communal field was the smallest of the six. Exceptionally, following the cadastral survey of Kag's fields, the land was not auctioned to private bidders as in the case of the other five sectors. Instead, the members of the sector gave the field, together with a donation of Rs. 201, to the monastery, pleading that they no longer wished to subsidise the ceremony. Since then, the field has formed part of the agricultural land of the monastery (*chos-zhing*).

2.4. The dPal-gtor-ba tshogs

The *dPal-gtor* ceremony is held on the fifteenth day of the fourth month, that is, on the day after the *dGe-rtsa* ritual. The sixteenth day is marked by a general circumambulation of Kag. The villagers walk around the perimeter of the cultivated area, carrying the sacred texts from the monastery library, as a means of protecting the barley crop from possible misfortune. The procedure is known variously as *chos-skor,* "circumambulation with sacred books", and *klungs-skor,* "walking around the fields". The chief feature of the procession is a small image of Maitreya which is kept in the shrine room of one of the noble houses.[21] The monastic ceremony that accompanies the circumambulation is called the *bsTan-pa rtsi-*

'dril.[22]

Even since the dissolution of the sectors the *dPal-gtor-ba* householders have retained the responsibility for sponsoring the *dPal-gtor* and *bsTan-pa rtsi-'dril* rituals, with the financial burden being borne by one household each year on a rotating basis. When the common fields were sold, the money collected was distributed equally among the various householders. The ceremonies are annually subsidised with part of the interest accumulated by each household on this capital, through investment in trade.[23]

There is a brief section in the KSM that records a dispute over village subsidies for the *bsTan-pa rtsi-'dril* and the Loyak. The entry suggests that the sponsorship of the Loyak and the *bsTan-pa rtsi-'dril* were connected, and that the village as a whole may have been responsible for subsidising the events:

> Things shall be the same as in the register [*bem-chag*] of the Ox year, but the following addition shall be made. The 11th day of the 7th month in a Hare year. Having gathered together the land-tax payments[24] of the village of bKag, subsidies were [also] collected, and there was was a discussion concerning the subsidies for the Loyak and *bsTan-pa rtsi-'dril*. The people of bKag made the following agreement.

According to the settlement concerning the fact that the *rol-po* were in disagreement, from the Hare year onwards, the payment for the Loyak and the *bsTan-pa rtsi-'dril*, those two, shall be no more than 4 *'bo-khal* of superior barley and 1 *'bo-khal* of inferior barley, and nothing else shall be paid even if the *rol-po* say it must. This document of agreement among the people of bKag has been presented to the six constables of the Hare year.

> Glang [sla] lo'i [lor] bem chag ['chags] nang bzhin yod pa [ba] la phyis ['phyis] su lo [lor] rtags [sta] yos lo zla ba bdun pa'i tshes 11 la bkag [skags] yul gyis [skyis] *bskal bdag* bsdus [dus] nas 'gro dgos ['gros dgo] bsdus [bdus] lo yag [dbyags] dang bstan pa rtsi ['tshil] 'dril ['drin] 'gro [gros] dgos kyi [dgo'i] skor [bskor] gleng [glang] mo byung ['byung] (nas) [lacuna of 1 syllable] bkag [skags] yul pa [ba] bka' gros ['dros] thog [thogs] nas rol po rnams [rnam] ma [sma] bcam [cham] pa'i [ba'i] chod [mchod] tshig [rtsigs] nas / lo [ltor] rtags [sta] yos nas 'phan lo yag [dbyags] dang bstan pa rtsi [rtsil] 'dril 2 'gro ['gros] dgos [dgo] (zhing tog?) [lacuna: ...ogs] 'bo [bo] khal [mkhal] bzhi dang so nas 'bo [bo] khal gcig [cigs] ma gtogs [stogs] gzhan [bzhan] rol po [bo] rnams [rnam] kyis [skyis] (ster) [lacuna] dgos [gos] zer kyang [skyang] ster [bster] rgyu med [smi] chod [mchod] zer nas skag [bskags] yul pa'i [ba'i] bka' gros ['dron] chod [mchod] tshig [rtsigs] yos lo'i [lus] rol po [bo] 6 la ster ba yin /

2.5. The Lam-bcos-pa tshogs

Only very scant information could be obtained about this sector, and even this is probably of dubious reliability. Like the Yur-chang-ba and the 'Dzing-chang-ba, the sector is said to have been concerned not with the sponsorship of

religious activities but the performance of a civic task. In this case, as the name suggests (*lam-bcos:* "road-repair"), the work involved the maintenance of routes in and around the village.

One informant substantially confused the issue, asserting that *lam-bcos* signified a memorial ceremony for a certain Lama Ngawang Thogme. On the third day of the second Tibetan month the patrons — apparently the sector itself — would hold a celebration, and on the eighth day of this month the entire community would participate. The nuns of Tiri convent used to make *tsha-tsha* in honour of Lama Ngawang Thogme. The lama is said to have been a *'ja'-lus-pa*, whose body dissovled in rainbow light after death. The final shrunken remains are said to constitute the inner treasure for the consecration of the image of Maitreya in the house of Pema Drolkar (the Red House Lodge Hotel).

The confusion — which may have arisen from the similar pronunciation of the terms *lam-bcos,* "road-repair", and *bla-mchod,* "offerings to the lama" — is interesting because of its possible relevance to the history of the sectors' formation. The matter will be taken up again in the conclusion.

2.6. The Bu-tsha-ba tshogs

As far as I could ascertain, the name Bu-tsha appears to have been the epithet of a lama from Nyilung who lived at an unspecified time. My principal informant pronounced the name of the sector as "Beza",[25] and seemed not to be entirely certain of the identity between it and the group responsible for sponsoring the cult of the lama. In addition to the six sector names that appear in the KSM the same informant offered a few others, which appear to have been pejorative sobriquets for both the Bu-tsha-ba and the Lam-bcos-pa. For example, the groups were also known as the Dziting *tshogs,* the "quarrelling sectors",[26] and the Baltag *tshogs,* the Beer-porridge sectors, after the name of an alcoholic mash that is sometimes eaten during festive gatherings.

The lama's retreat (*ri-khrod*) at Nyilung may still be seen a few hours west of Tiri on the way to Sangdag. The place is said to be marked by a chorten. The fragmentary information that I was able to obtain about the lama is in the nature of pious anecdotes about his mystical affinity with animals. It is said, for example, that he used to milk the wild blue sheep, and used a domestic cat as a courier for messages between his mountain retreat and the convent of Tiri, of which he may have been the tutelary lama. On one occasion he sent the cat down to Tiri with an urgent message attached to its collar requesting a small quantity of beer for a ritual he was due to conduct the following day. The nuns duly supplied the beer and sent the cat back with the following reply:

Grandfather anchorite of Nyilung
The cat has set off briskly
To fulfill your wish.
Grandfather anchorite of Nyilung
We have brought you the finest beer.

Nye lung [sp?] mes mes mtshams pa
be le bsam pa'i don grub
hur thag byed la song
Nyi lung mes mes mtshams pa
chang gi *tingma*[27] khur yod

The lama's connection with Kag is not clear, but it is likely that his reputation won him patronage from the community, and many of the nuns of Tiri are likely to have been women of Kag. Whatever the case, the people of Kag honoured him after his death by building a chorten in the village. The duty of the Bu-tsha-ba sector was to perform an annual reconsecration (*rab-gnas*) of this stupa, and also perhaps of the stupa at Nyilung itself, by resurfacing it with coloured clays (*btsag*) and making an offering of juniper incense (*bsangs*). This regular veneration and maintenance have been discontinued since the dispersal of the sectors.

2.7. Community leaders, field management and the six sectors

The internal political organisation of Kag was broadly similar to that of other settlements in Baragaon and Panchgaon. It should immediately be stated that there are sometimes spectacular differences between villages regarding the numbers of officials, the methods whereby they are recruited and so on, and I hope to present a comparative study of these variations in the near future.[28] As a general rule, the senior person in each village is the headman (*rgan-pa*), who may serve alone or together with a number of junior headmen. The incumbency may be for just one year or it may, exceptionally, be lifelong. The headman is the highest authority in the *internal* affairs of the village, but major disputes are referred to the organs of the state government. Under the headman are a number of lesser officials called *rol-po* (Nep. *katuwal*), or "constables". They are, in a sense, the executive wing of the headman's authority, being charged with enforcing village law and imposing fines. The situation is complicated by an assortment of other religious and secular officials, serving for varying periods. Before discussing the recruitment of the constables, a few words may be said about the institution of headmanship.

2.8. The headmen of Kag

As in many communities, the system for recruiting headmen in Kag seems to have undergone a series of changes. Shortly prior to the dissolution of the *tshogs*, recruitment seems to have been based on either appointment or household rotation. Whatever the case, it is certain that the headmen held office for only one year at a time. At the time of the KSM, however, during the nineteenth century, the position of headman seems to have been a lifelong one. This is evident from the repeated appearance of two names, rGan-pa Dar-po and rGan-pa Ratna. Informants in Kag confirm this situation, since the former has passed into local folklore as a long-serving village leader. However, the evidence of the KSM contradicts the common assertion that there was a single headman, since Dar-po and Ratna figure together in several entries.

The seventeenth-century Kag *bem-chag* states that the headman received his authority from the nobility (D. Schuh, personal communication). The advantage of such a system would have been that the rulers could retain in power for as long as they wished someone who was cooperative with their interests. It is therefore interesting that Kag folklore should contain an account of a conflict between the nobility and a headman that was resolved not, as one might expect, simply by the dismissal of the former, but by his murder.

through by mice or by the red-headed black caterpillars that infest the fields in June. (*Thu-khen* means simply "gatherers": *'thus-mkhan*). These "birdfood gatherers" were entitled, after the reaping, to collect any grain that the owners had left behind. However, if unobserved, they would attempt to steal grain from the harvested sheaves. The task of the constables and their assistants was to supervise the gleaners and to ensure that they took no more than their due.

Prior to the harvesting the twelve men would make beer from one *'bo-khal* of barley (using their private grain) in the *gnyer-tshang* (the "stewards' office", a building used for civic functions), and transport it up to a house situated on the vantage point called Thana Gata, "Check-post Ridge". The beer, and a slaughtered goat, would help to ease the tedium of watching the fields for the three days that the gleaners were permitted to gather the surplus grain. The guards were entitled to appropriate for themselves all the grain gathered by any gleaner who was caught stealing, and in this way, it is said, they would attempt to make up the *'bo-khal* of barley that they had pooled for their beer. After these three days the six assistants would be dismissed and the village animals let into the fields to graze the stubble. The *rol-po* were also required to supervise the fields during the buckwheat harvest, but no assistants would be appointed to help them on this occasion.

More generally, the constables were responsible for the supervision of the fields, ensuring that livestock did not stray into the crops and fining the owners of any animals that did. Consistent with their role of guardians of the fields, the constables, together with the headman, were also responsible for agrarian rites involving the propitiation of Kag's territorial divinities. Traditionally, they were required to procure the goats and the yak which were annually sacrificed to the three principal *genii loci,* and would reconsecrate the cairns marking their residences with washes of clay and lime (*btsag*).

The roll of taxpaying households listed in section A of the KSM is followed by a brief section that specifies some of the duties and rights of the headmen and constables. The passage was added "at the insistence of the religious community (*lha-sde*), who have made a statement to the secular community (*mi-sde*)". The first point is that it is the responsibility of the headmen and constables to see to it that a number of monks should be present to read the register at the time of the dGe-rtsa ceremony, on the sixteenth or seventeenth day of the month. If the monks do not assemble, substitutes should be arranged. The timing of the assembly is appropriate in view of the association of the dGe-rtsa ceremony with agrarian affairs. (As we have seen the date of the dGe-rtsa coincides with the obsolete Loyak festival, and the appointment of assistants to help the constables with the policing of the harvest.) The entry continues:

> The gabions for the irrigation channel of the Shung fields should be properly constructed, and the headmen and constables of Kag should verify whether or not this has been done. If it has been done, the people of Kag shall receive one large earthenware jar of beer.

The text of this passage is as follows:

Lha sde rnams kyis [gi] nan gyis [gi] / mi [mis] sder gsungs [gsung] par [bar] rten / ma yig cig 'thus [thus] pa'i bka' gros [sgros] bsgrigs ['brigs] / 'di skabs gsung [bsungs] tshig [tshigs] chod tshul ['tshul] la / dge rtsa skabs su / tshe [tshes] bcu [cu] drug gam / bcu [cu] bdun ma dge 'dun tshang [mtshang] sgo dang de bzhin btsun pa yongs kyis [gi] zher (?) [gzher] zhib [zhibs] pa / bkag [skags] gi rgan [sgan] pa dang rol pos [po'i] byed rgyu ['gyu] / gal [sgal] srid ma 'dzoms tshe / tshab [tshabs] sgrig [grigs] rgyu ['gyur] chod yod / gzhung gyi [gi] yur ba [ra] la / sgrom [sgroms] yang dag [bdag] rol rgyu ['gyu] / byung ma byung / bkag [skag] gi rgan [sgan] rol rnams kyis [gi] gzigs [bzigs] rgyu [gyu] / byung phyin / bkag [skags] pa yul ba [pa] rnams kyis [gi] / chab ['chab] ka [ska] khal rgyang (?) [rgyangs] re zhu [gzhu] rgyu /

The passage concludes with the seals of witnesses and representatives from the monastic and secular communities of Kag.

2.10. Divine witnesses

Any official, such as the *rgan-pa* or *rol-po,* whose power is sanctioned by the community, is ultimately responsible to the people. This is most dramatically illustrated by Te, where the headmen and constables are *always* fined by the village at the end of their office: the only uncertain issue is the scale of the fine (Ramble 1993*b*). A similar reckoning is said to have taken place in Thini, and apparently still occurs at three-yearly intervals in Marpha. But even in settlements such as Kag, where conclusion of office was not marked by a civil trial, the village officials would sometimes call the gods to witness that they had discharged their duties properly.[30]

The wording of the oath that was traditionally taken by the *rol-po* of Kag is given in the KSM. The passage begins by calling to witness a number of divinities. Precisely which gods are so invoked is not clear because of uncertainty concerning the sequence of folios at this point. It is certain at least that the "mighty gods (*lha*), serpent-spirits (*klu*), *btsan, rgyal-po, gza'-gnyan* and lords of the soil (*sa-bdag*)" are invoked, because they figure on the same folio as the oath itself. Another folio cites a long series of siddhas, lamas, tutelary gods, protectors and other divinities from the Buddhist pantheon, but it is doubtful that these head the list of witnesses.[31]

The wording of the oath itself runs as follows:

If [the six *rol-po*] have acted without duplicity and negligence with respect to the law of the community in dealing with everyone, whether powerful or weak, high or lowly, outsider or insider, may they be blessed by the gods who are here called to witness. If they have acted with duplicity and negligence with respect to the law of the community in dealing with everyone, whether powerful or weak, high or lowly, outsider or insider, may they punished by the gods who are here called to witness. If they have stolen any fodder or food from the villagers, whether a great or a small quantity, saying nothing about it and concealing it, may they be punished. If they have not done this, may they be blessed. If they have acted in accordance with

past custom, may they be blessed by the gods who have been called to witness above. If they have done anything that is not in accordance with past custom, may they be punished by the gods who have been called to witness above.

Yul pa'i yul khrims ched [phyed] du drag [grag] zhan [gzhan] mtho [thos] dman [man] phyi nang gang du yin kyang / kha gnyis [nyi] 'dzem [mdzems] rib med pa byas yod na / gong [dgong] gyi [gi] lha dpang [spang] rnams kyis bkra shis shog / yul pa'i yul khrims ched [phyed] du drag [grag] zhan [gzhan] mtho [thos] dman [man] phyi nang gang du yin kyang / kha gnyis [nyi] 'dzem [mdzems] rib byas yod na / gong [dgong] gyi [gi] lha dpang [spang] rnams kyis [kyi] chad pa gcod [bcod] / yul pa'i chag [chags] zas che chung gang yin rung bzhed (?) [zhes] med sbas te [ris] rku gsum (?) byas yod na / chad pa gcod [bcod] / ma byas yod na / bkra shis shog / gang ltar kyang sngon [mngon] srol ltar gyi slar [lar] *rgya* la ci [bci] drag [gyag] byas yod na / gong [dgong] gyi [gi] lha dpang [spang] rnams kyi bkra shis shog / sngon [mngon] srol ltar gyi slar [lar] *rgya* la ci [bci] drag [grag] gang drag [grag] ma byas na / gong [dgong] gyi [gi] lha dpang [spang] rnams kyi chad pa gcod [bcod] /

2.11. The waning of the constabulary

Information about what happened to the structure of village leadership after the end of the sectors is inconsistent, but broadly speaking the institution seems to have undergone the following changes. There was an intermediate phase in which there were one *rgan-pa* and three *rol-po*. This situation has been reversed: there are now three *rgan-pa* and one *rol-po*. No system of household rotation applies for either position, and the institution of hereditary headmanship has long ceased to exist.

Today, the three *rgan-pa* are appointed by the community for a period of one year. As an honorarium for their service they are each given an interest-free loan of Rs. 3000 from the village coffers, repayable at the end of the year. The position of *rol-po* is held by anyone who volunteers for the post. Since the task involves much irksome patrolling of the fields and carries no prestige, volunteers can be obtained only by offering a financial incentive. The first paid constable, who is said to have taken office at the time of the cadastral survey, received a fee of Rs. 1800. The most recent holder received Rs. 3000. The only volunteers available are indigent villagers who alone are willing to accept such a small stipend.

2.12. Fluctuating membership of the sectors

A significant factor in hastening the dissolution of the sector-based constabulary apears to have been the inequality of sector membership. As we have seen earlier, the number of households in each sector did not remain consistent over the course of time. It is said that, prior to the cadastral survey, the dPal-gtor-ba counted about three times as many members as the *dGe-rtsa-ba*. An indication of this trend is seen in the Wood Rat Year entry of the KSM, where the sectors number fourteen and eight households respectively. In practice, this discrepancy was even greater, because in two cases a single householder of the *dGe-rtsa-ba* is the head of two house-

holds. Thus the ratio of *householders* for the two sectors at this time was 14:6.

One result of this imparity was that the cycle of incumbency for constables differed considerably from one sector to another. Being a constable is not a popular job. It is neither gratifying in terms of prestige nor financially remunerative, as the preceding section has shown. The office is seen as a thankless chore which inevitably leads to enmity with certain neighbours and, above all, obliges the incumbent to forgo trading activities by binding him to the village. The fact that a *dGe-rtsa-ba* household found its turn for constabulary duty coming up with markedly greater frequency than a neighbour from a larger sector led to considerable discontent with the system. Calls for a revision of the situation came to nothing, since, in the nature of the dispute, the complaints came from a minority. Nevertheless, it does seem that this dissatisfaction was one of the factors that led to the precipitate abandonment of the *tshogs* system.

3. Conclusion

An important question that has not been satisfactorily answered by the foregoing commentary to the KSM concerns the real reason for the division of Kag into six sectors. This may seem surprising, since each of the sectors is named, and the functions bearing on these names have been described in varying detail on the basis of interviews with villagers. At first sight, then, the justification for the existence of the sectors would appear to be the fulfilment of the civic duties after which they are named.

The sectors were certainly required to meet these obligations, but there are reasonable grounds for doubting that this was their principal function. A closer examination of the situation suggests that the relationship of the sectors to their ostensible duties was rather tenuous.

Let us consider first the role of the Yur-chang-ba and the 'Dzing-chang-ba. The involvement of these sectors in the actual clearance of the irrigation canals and the reservoir was aparently limited to the provision of small quantities of beer and roasted grain to the labourers. The greater part of the beer that was prepared was for the benefit of the sectors themselves. Moreover, the sectors played no special part in the organisation of the necessary labour. Work was carried out by the village as a whole, and the workers were summoned and directed by the constables.

The superficial character of the sectors' involvement in their supposed obligations is not confined to the Yur-chang-ba and 'Dzing-chang-ba. The task of the Bu-tsha-ba is said to have been limited to repainting one, or possibly two, stupas commemorating an obscure lama. By contrast, the annual reconsecration of the stupas representing the main divinities of Kag was performed by the headmen and constables.

Turning to the dGe-rtsa and dPal-gtor sectors, there are several points to be noted here. The two ceremonies in question are liturgical rituals that coincide in time with two rites that have strongly agrarian overtones: the bsTan-pa rtsi-'dril, which among other things features the circumambulation of the village land, and the now obsolete Loyak, which involved the sacrifice of a yak to one of the three main village gods. It is significant that the sectors' responsi-

bility is for the two essentially Buddhist ceremonies: in the case of the dGe-rtsa even this seems to have been almost nominal, since the communal field from which the sector provided the material support for the occasion had a seed capacity of just 6 *zo-ba*. As we have seen, support for the bsTan-pa rtsi-'dril and Loyak ceremonies was probably the responsibility of the entire community, under the supervision of the headman and constables.

Little need be said about the Lam-bcos-pa, since the information obtained is too fragmentary to bear analysis. Neverthess, the fact that there is no clear recollection of the function of this group may itself be significant: the nominal function was far less important than the existence of the group itself.

The picture that emerges is as follows. All the important agrarian activities of Kag are carried out by the entire village, and supervised by the headmen and constables. The most important agrarian rites were financed by the whole community, and organised or performed by the headmen and constables. The involvement of the sectors is cosmetic. Even their names are inappropriate: each is preceded by the word *Tshe-bcu,* the tenth day. While this day of the month may have special religious significance in the Tibetan Buddhist calendar, it is entirely irrelevant to the present context since none of the sectors has any obligations connected with the tenth day.

The inevitable conclusion to be drawn is that the sectors originally existed for some purpose quite different from the roles implied by their names, and that these obligations were imposed on them — one almost suspects the hand of the monastic community — at a later stage.

The principal reason for the existence of the sectors was the clearly the recruitment of the constables, and all other considerations are secondary. The conclusion is suported by inquiries in other communities in Lo and Baragaon, where a system of sectors (known by a variety of names) continues to operate. The sectors may have various subsidiary obligations, but the principal reason for the division is the recruitment of village officials.

The constables are the chief executors of the agrarian affairs of a community, organising agricultural labour, ensuring the security of the fields and acting as the priests for the gods of the soil. In certain settlements there is evidence that the community is organised, and the constables accordingly recruited, as a function of agrarian geography. Might this also have been the case in Kag? This was not explicitly asserted by any of my informants, and information concerning the sectors is unfortunately too fragmentary to provide a clear answer. Nevertheless, since there is a certain amount of circumstantial evidence, the matter should at least be given some consideration.

The settlement of Thini, to the south, was traditionally organised in three sectors (called *pha-'dzin*), a grouping that is said to have been based on the existence of three arterial irrigation canals. There used to be six constables (called *tshowa*), two being recruited annually from each sector.

Kag, too, has three irrigation canals and used to

have six constables; but it had six, not three, sectors. And yet, if we examine the sectors closely it becomes apparent that they are paired. Information concerning the Bu-tsha-ba and Lam-bcos-pa is unfortunately too indistinct, but it may be significant that our informant applied the nicknames Dziting and Baltag to them indiscriminately, and that Lam-bcos-pa, perhaps understood as Bla-mchod-pa, was said — like the Bu-tsha-ba — to signify the veneration of a lama from Nyilung connected with Tiri.

The other two pairs are more explicit. The Yur-chang-ba and 'Dzing-chang-ba were both concerned with the maintenance of Kag's irrigation channels, and shared at least one day of common activity. Similarly, the dGe-rtsa-ba and dPal-gtor-ba were responsible for financing ceremonies on two consecutive days, and may even have held joint financial responsibility for a part of the events.

The evidence is tenuous, but there is clearly some suggestion that the six sectors may have evolved out of an older, tripartite division of the community based on the settlement's irrigation system.

Notes

1. Khya-mo; possibly for 'Khyam-mo, "the errant woman", suggesting that she may have been a Tibetan. Landless Tibetans who crossed the border into Nepal are frequently referred to as *'khyam-po*.

2. Problems with the estimated lifespans of certain people are posed by another entry in the KSM. The entry, which will be discussed below, is dated the Water Serpent Year and names both the headmen Ratna and Dar-po (who is referred to as "rGan-pa Dar"). The year is either 1833 or 1893. The latter would make Ratna impossibly aged, while the former is earlier than the date of birth we have estimated for rGan-pa Dar-po.

3. This is true only of Kag. Although they may have the same name, measures are not standard throughout Baragaon. In Chongkhor, for example, 1 *pathi* is equal to 3 *zo-ba,* and in Tshug appromimately 2.6 *zo-ba.* An exhaustive treatment of this matter need not be undertaken here.

4. The ratio of 1:18 recorded by Pohle (1993) in Kagbeni is considerably in excess of the figures I was able to obtain. This difference may be due to the relatively superficial nature of my enquiries with regard to crop yields. Nevertheless, for the present article, I shall take 1:9 (rather than Pohle's average of 1:13-14) to be the mean seed-to-yield ratio for Kag.

5. Taking the total seed capacity to be not 128 *'bo-khal* 8.5 *zo-ba* but 142 *'bo-khal* 8.5 *zo-ba,* for the reasons discussed below.

6. Respectively *Hordeum vulgare* L.s. convar. *hexastichon* var. *hypathorum* and convar. *intermedium* (Pohle 1993 citing Nakao 1956).

7. In the transliterated excerpts from the KSM, material in square brackets [...] represents incorrect spellings in the original. Words in round brackets (...) have been inserted to improve the reading. {...} indicates superfluous words in the

original. Terms between asterisks *...* denote expressions in the local dialect with no obvious literary equivalent.

8. The necessary information was kindly provided by Perdita Pohle.

9. I am grateful to Perdita Pohle for providing me with this information.

10. A brief description of the nature of subsidiary houses (*kha-'thor*) in Baragaon is given in Ramble 1984: 188 ff.

11. Today, when a person dies, the bereaved family makes an offering of cash to the monastery. However, in the past (although it is not clear when the practice stopped) a gift of land would be made instead. Monastic land, as we have seen, is not susceptible to taxation.

12. The name designates a variety of willow tree that is said originally to have been introduced from Ladakh.

13. The etymology of this name is uncertain, but it may be noted that the term *'ar-ba* means "lot".

14. Or: "there are some who get [only] one chance at irrigation" — text not clear.

15. The translation of this passage is partly conjectural, as the meaning of the text is obscure. However, a more literal rendering would make no sense: the implication would be that a system of casting lots is being abandoned in favour of the same system. The interpretation given here assumes that the passage is elliptical, and that the existence of another intervening system must be assumed. Such a reading may be supported by the emphatic *sngon snga mo*, translated here as "in the distant past", which seems to imply that irrigation by lottery was abandoned a long time ago.

16. The text is not at all clear in this last sentence: the meaning might even be the opposite.

17. Around 3 a.m; the dawn is said to be heralded by the third cock crow.

18. Note that this name, which I have anglicised as Bowa, appears as Poa on the land use map (Pohle 1993).

19. In relatively recent times the lower age limit was raised to eighteen years, although in other villages, such as Te — where this category is known as *memang* (< Tib. *mi-dmangs*?) — thirteen is still the lower limit.

20. *This is also the date of the now obsolete yak* sacrifice that used to be held in Kag (see Ramble 1993*a*). It is possible that the *dGe-rtsa* ceremony was introduced into the calendar of monastic rituals precisely as a Buddhist compensatory measure against the perceived ill-effects of a blood sacrifice. Currently, many lamaist communities hold ceremonies at Dasain to offset the potential repercussions of abundant slaughter.

21. The house is well known as the Red House Lodge, whose shrine room also houses a much larger image of Maitreya.

22. I have not been able to establish whether there was an explicitly political dimension to the

bsTan-pa rtsi-'dril, as there is in Lo Monthang. In the case of the latter, two *bsTan-pa rtsi-'dril* ceremonies are held each year, an "Old" and a "New" one. The ceremony is generally pronounced *tici,* apparently a colloquial form of *bsTan*[*-pa*] *rtsi*[*-'dril*]. The new one is a largely monastic affair, while the old one seems to be concerned more particularly with royal power. All seven divisions (*tsho*) of Lo participate in this event, which culminates in a *mdos* ritual.

23. This method of sponsorship is reminiscent of the system used in the neighbouring settlement of Lubra. In the latter case the situation is complicated by the fact that all the ceremonies in the annual cycle of liturgical rituals are financed in this way, that the householders themselves are the priests, and the capital they control has been invested by outsiders (Ramble 1984).

24. The term used is **kaldag**, a Kag colloquialism for *sa-'gro.*

25. It may be noted that the term for "son" in the Baragaon dialect of Tibetan is *piza,* which probably represents a colloquial pronunciation of *bu-tsha.*

26. *Dziting* is a local term meaning quarrelsome or noisy, possibly cognate with *'dzing-ba,* to quarrel.

27. **Tingma** (*gting-ma?*) is a synonym for the more commonly used *nying-khu,* the strongest beer drawn off from a fermentation jar.

28. For a discussion of the highly complex system of recruitment for Te's headmen, see Ramble 1993*b.*

29. Concerning this ceremony (which traditionally involved the sacrifice of a yak), and the justification for the Tibetan orthography given here, see Ramble 1993*a.*

30. The oaths sworn by the officials of Lubra and Te have been discussed respectively in Ramble 1984 and 1993*b.* A passage in the Kag *bem-chag* suggests that, contrary to the practice of these two settlements, where constables systematically swear oaths at the conclusion of their incumbency, those of Kag were required to do so only when they were under of suspicion of mismanagement (D. Schuh, personal communication).

31. It may be mentioned that divine witnesses to oaths sworn by headmen in other communities seem to emphasise gods of place: in the case of Te, for example, only the three main divinities of the village territory are invoked, while Lubra's oath cites "The Bonpo protectors of Lubra, ...[lacuna of two or three syllables in text], the excellent mother Srid-pa'i rgyal-mo [the head of the *ma-mo*], the eight categories of gods and sprites, village gods and lords of the soil, and the goblin Kyerang Dragme [the principal soil-god of Lubra]".

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Bonpo householder priests in Western Nepal. D. Phil. thesis, University of Oxford.

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Table 1: Summary of Kag's land-tax register

A. Wood Dragon Year (1784)

Sector	**No of households**	**Seed capacity**
Tshe-bcu dpal-gtor-ba	24	53 b 11 z
Tshe-bcu 'dzing-chang-ba	20	37 b
Tshe-bcu bu-tsha-ba	10	15 b 6 z
Tshe-bcu yur-chang-ba	16	20 b 1+ z
Tshe-bcu dge-rtsa-ba	12	19 b 14 z
Tshe-bcu lam-bcos-pa	10	15 b 19 z
Khal-'thor-ba	(3)	2 b 1 z
TOTAL	92	163 b 2 z

B. Water Dog Year (1802)

Sector	No. of households	Seed capacity
Tshe-bcu dpal-gtor-ba	15	32 b 16.5 z
Tshe-bcu 'dzing-chang-ba	16	35 b 6 z
Tshe-bcu bu-tsha-ba	7	11 b 2 z
Tshe-bcu yur-chang-ba	11	16 b 15 z
Tshe-bcu dge-rtsa-ba	13	17 b 9 z
Tshe-bcu lam-bcos-pa	10	9 b 14 z
Kha-'thor-ba	(13)	5 b 6 z
TOTAL	72	128 b 8.5 z

C. Earth Serpent Year (1809)

Sector	No. of households	Seed capacity
Tshe-bcu dpal-gtor-ba	15	43 b 16 z
Tshe-bcu 'dzing-chang-ba	15	34 b 8 z
Tshe-bcu bu-tsha-ba	7/8	11 b 4 z
Tshe-bcu yur-chang-ba	10	16 b 8 z
Tshe-bcu dge-rtsa-ba	11	19 b 14 z
Tshe-bcu lam-bcos-pa	11	11 b 12 z
Khal-'thor-ba	(12)	5 b 1 z
TOTAL	69/70	142 b 13 z

D. Wood Rat Year (1864)

Sector	**No. of households**	**Seed capacity**
Tshe-bcu dpal-gtor-ba	14	52 b 0.5 z*
Tshe-bcu 'dzing-chang-ba	13	?32 b 1.5 z**
Tshe-bcu bu-tsha-ba	7	10 b 5 z
Tshe-bcu yur-chang-ba	7	?16 b 13 z
Tshe-bcu dge-rtsa-ba	6	17 b 10 z
Tshe-bcu lam-bcos-pa	8	14 b 6 z
Kha-'thor	(11)	?5 b
TOTAL	55	?147 b 16 z

* The seed capacity of one household in the dPal-gtor sector is illegible because of damage to the text. All that is visible is the vowel *o* following the word *'bo-khal.* The possibility that the missing word is *do,* meaning "two", must be discounted. The term *do* is frequently used in conjunction with *zo-ba* but conventionally may never refer to *bo-khal.* The lowest figure containing the vowel *o* is fifteen (*bco-lnga*), and the seed capacity of this household has been taken as such. The figure is exceptionally high, but accords with a large landholding that occurs in the dPal-gtor sector of sections C and A and — as we shall see below — almost certainly in section B.

** Question marks indicate that the figure is uncertain due to the text being damaged or otherwise illegible in places.

Facsimile extracts from the KSM

The present section contains photographic reproductions of selected passages from the KSM. The text has not been presented in its entirety: of the four major entries, only two - sections A and D - have been included. However, since the presentation of tax requirements does not differ significantly from one section to another, the two excerpts will at least provide an adequate idea of the way in which the register is structured. Besides these main entries dealing with the payment of *sa-'gro* taxes, other passages that have been discussed above are reproduced here.

The contents of the plates may be summarised briefly:

Plates I-VIIa: land tax register for Section A, Wood Dragon year (1784).

Plates VIIb-VIIIa: duties of headmen and constables (see 2.9 above).

Plate VIIIb: payment to blacksmith of a percentage of yield from dbYar-ston fields (see1.3).

Plates IXa-XIII: land tax register for Section D, Wood Rat year (1864).

Plates XIV: regulations concerning irrigation (see 2.1).

Plate XV: oath sworn by constables (see 2.10).

Plate XVI: dispute over subsidies for ceremonies in Kag (see 2.4).

The letters a and b following a Roman numeral signify respectively the upper and lower halves of a plate. It should be noted that the plates do not necessarily replicate the form of the KSM booklets: in order to avoid reproducing the numerous blank pages of the original, lower pages are sometimes presented in the top half of the plate, and upper pages in the bottom half.

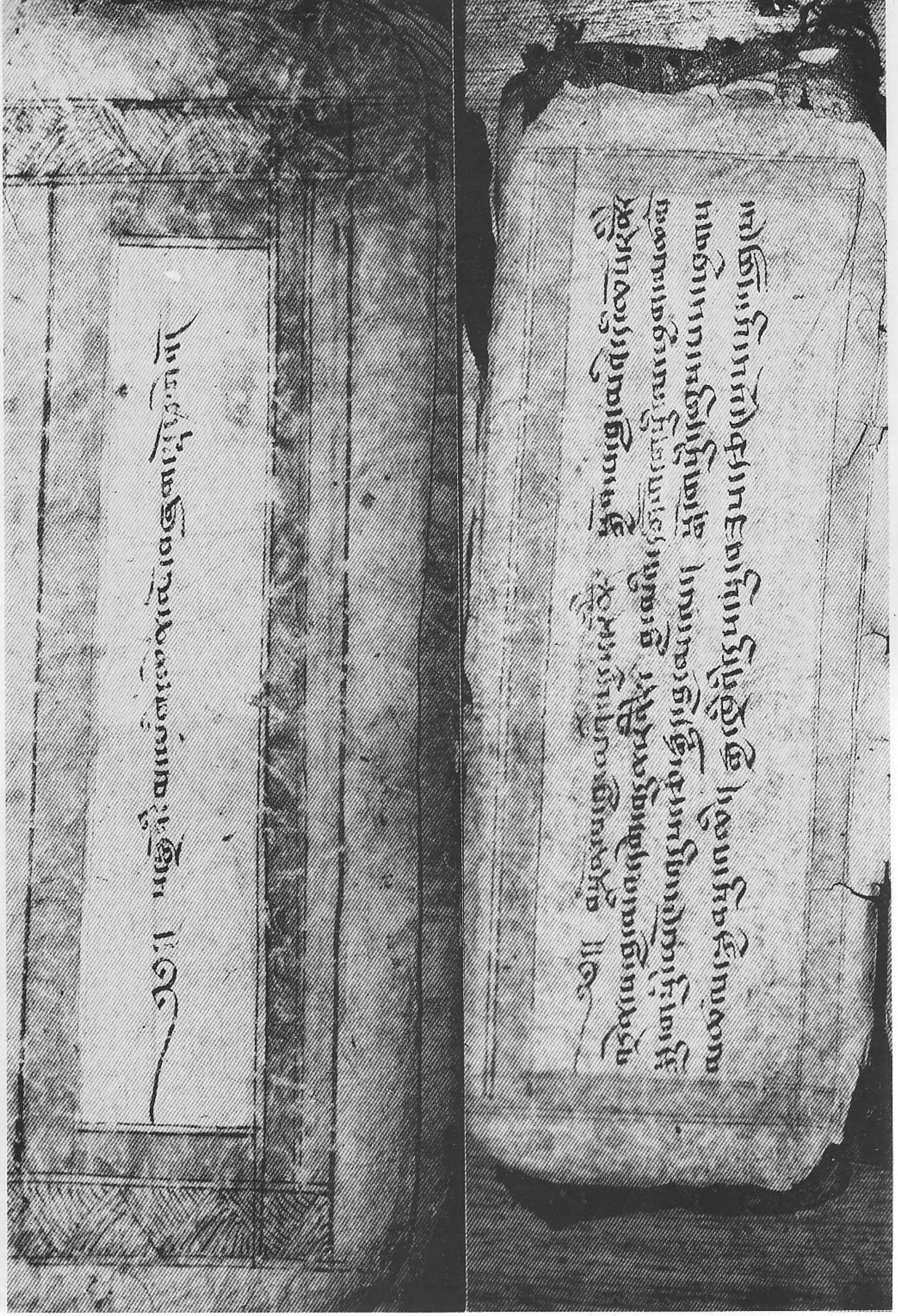
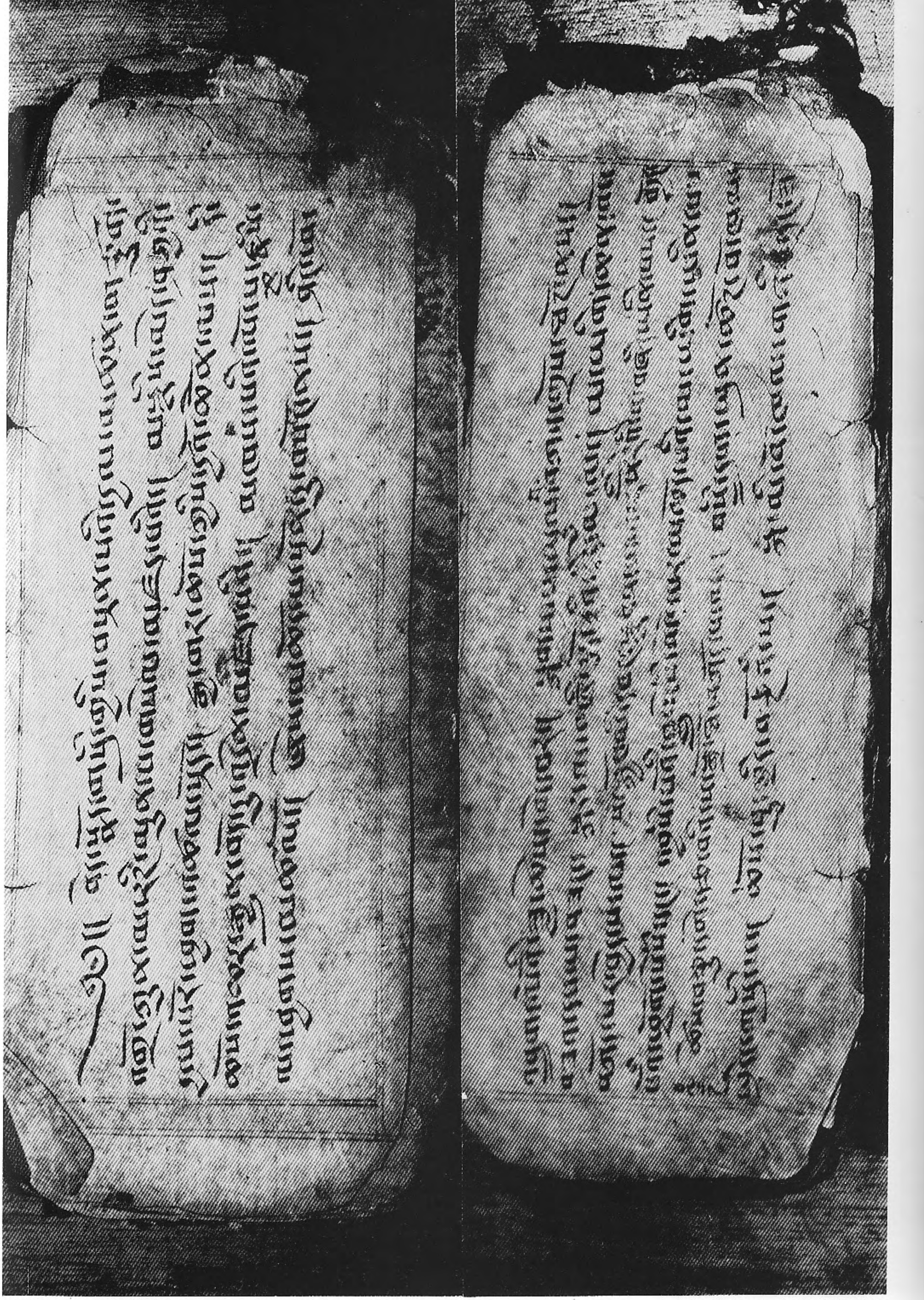


Plate I



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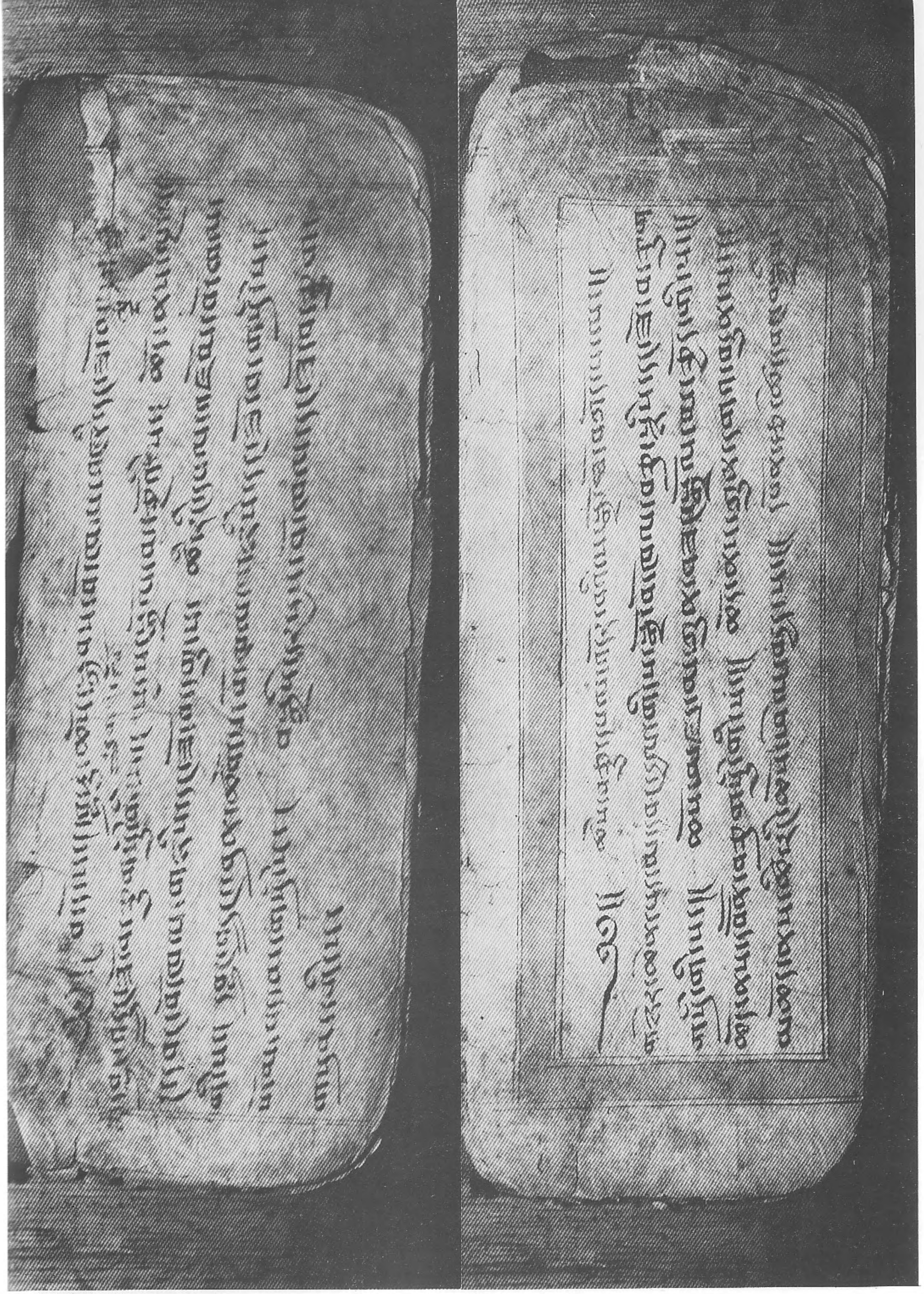
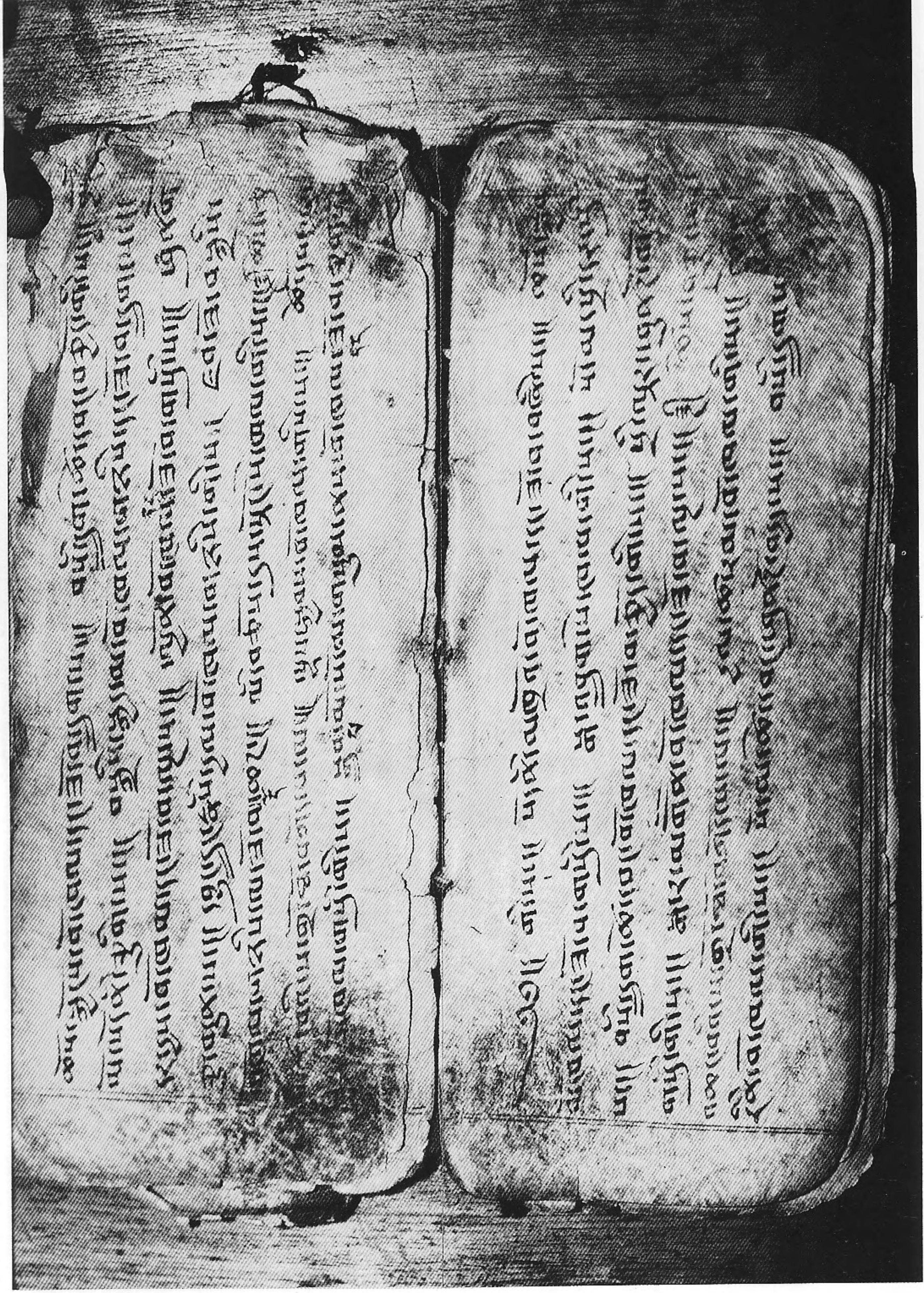


Plate III

Plate IV



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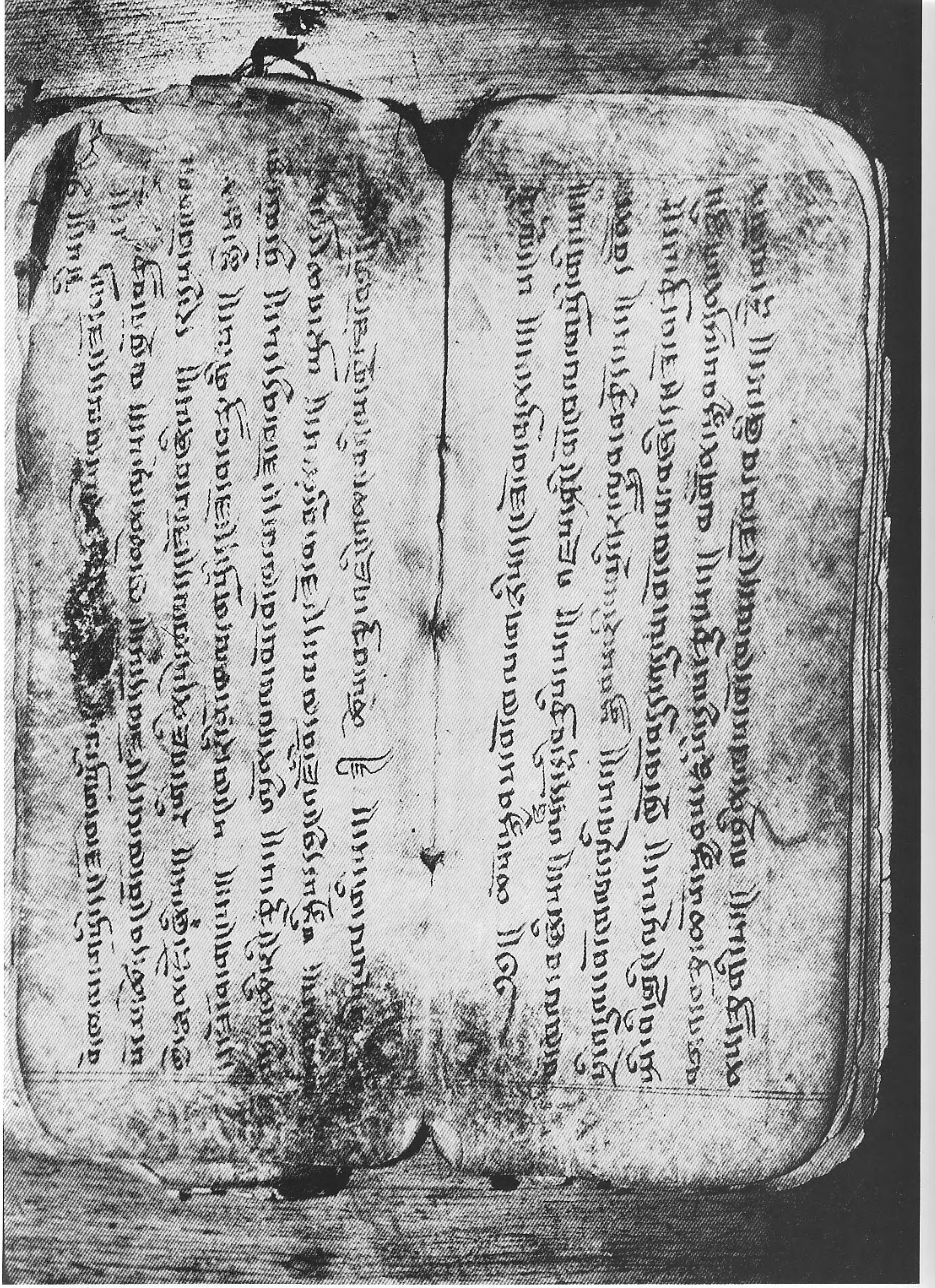


Plate VI

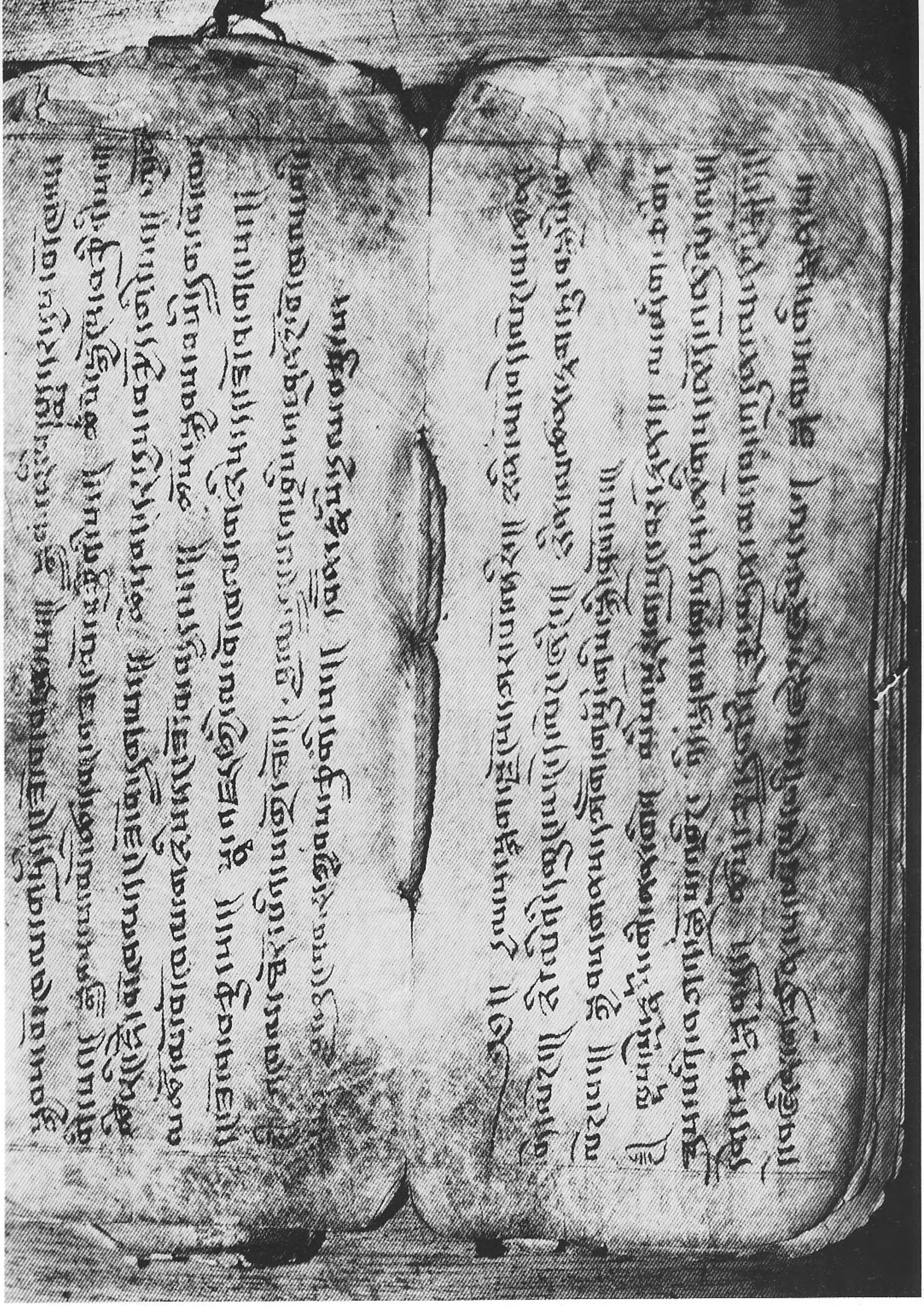


Plate VII

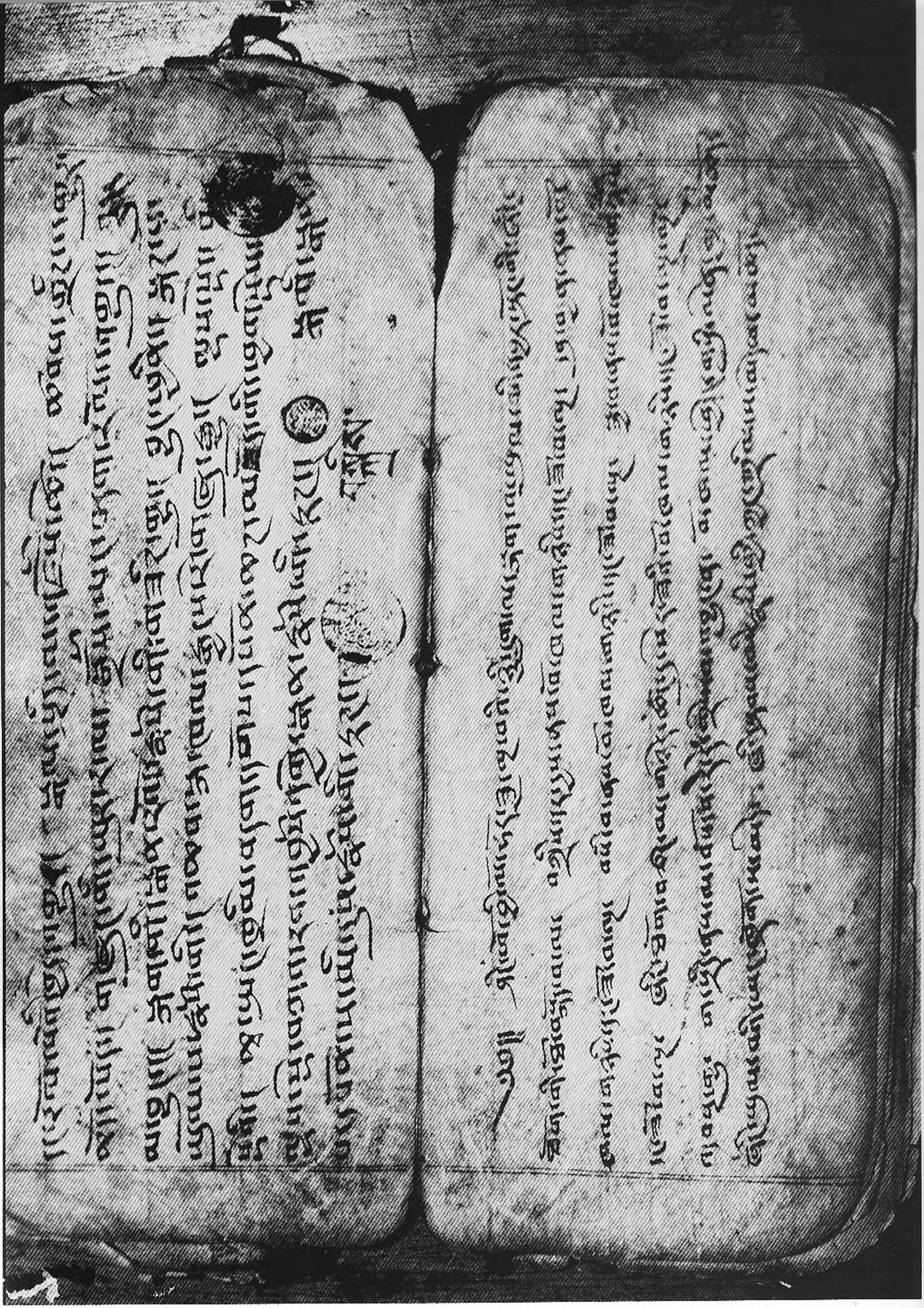
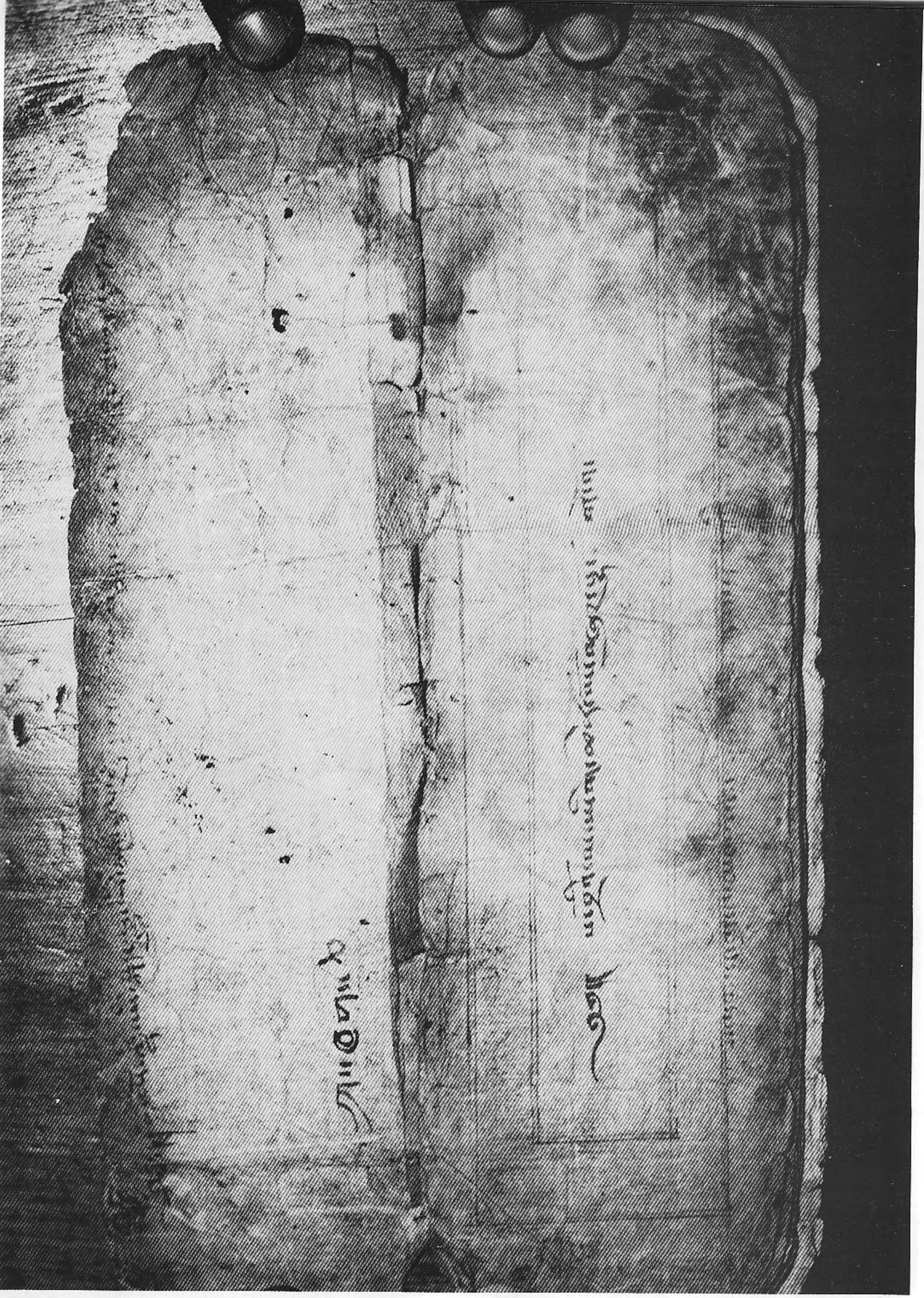


Plate VIII



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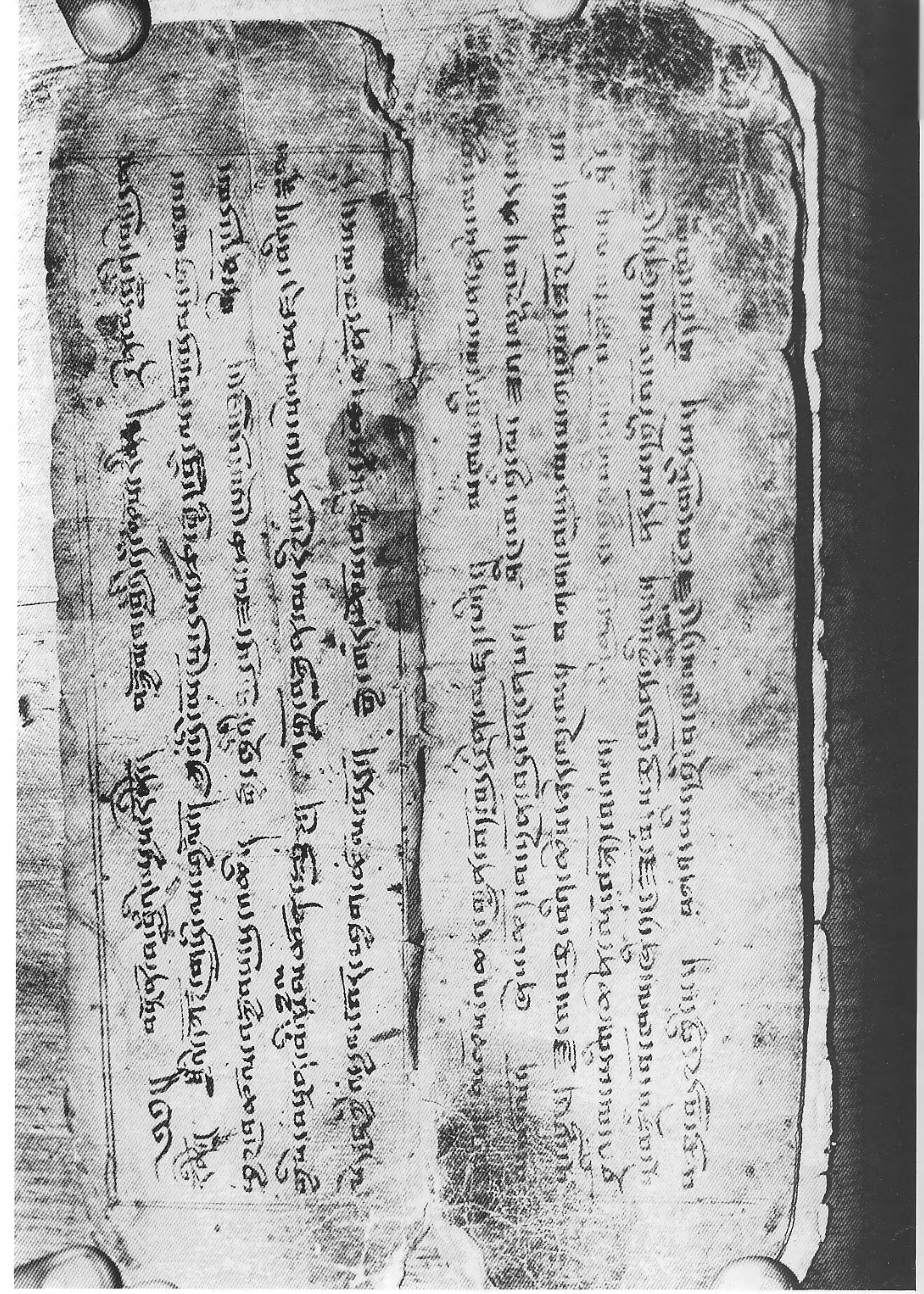


Plate X

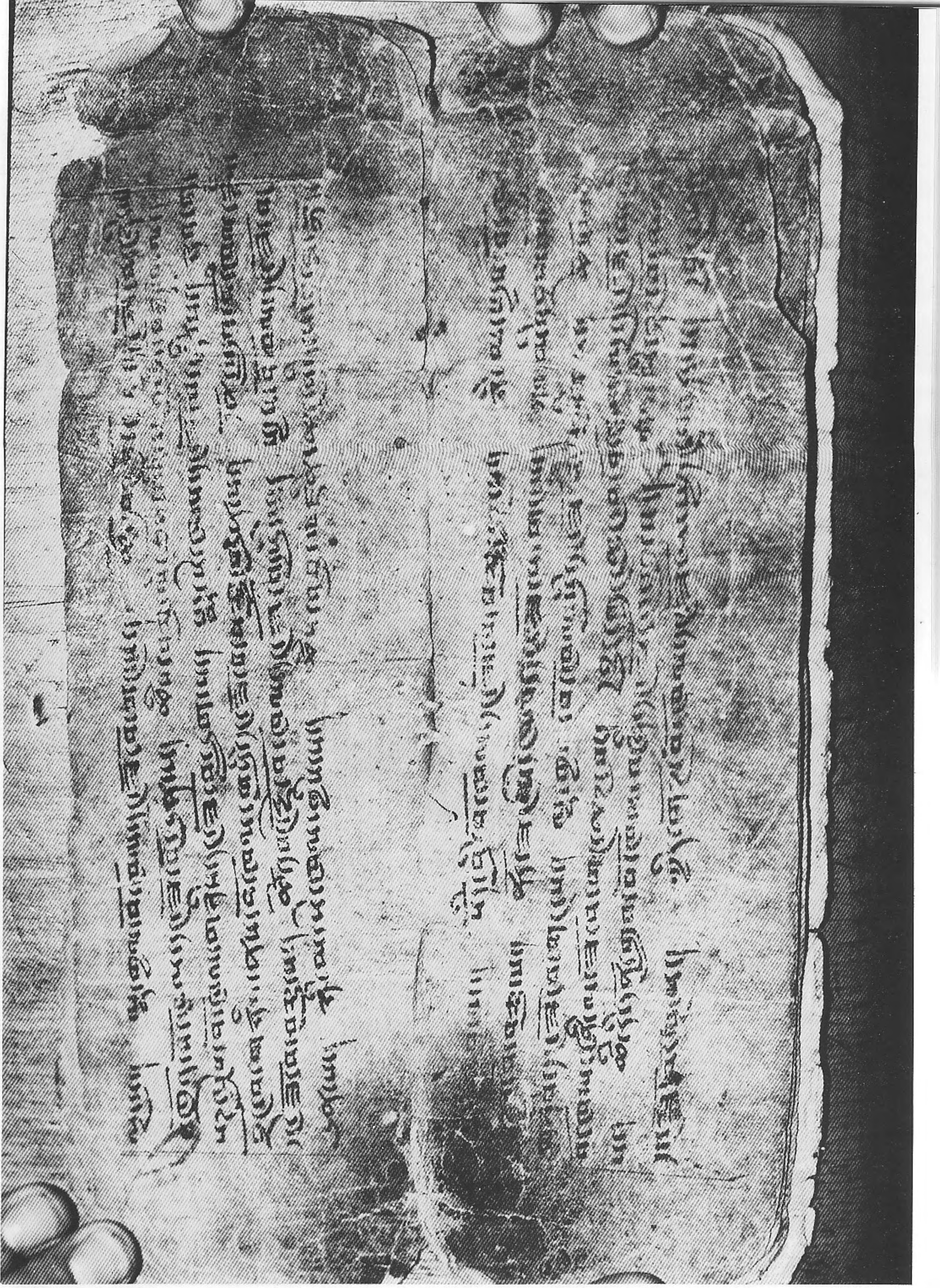


Plate XI

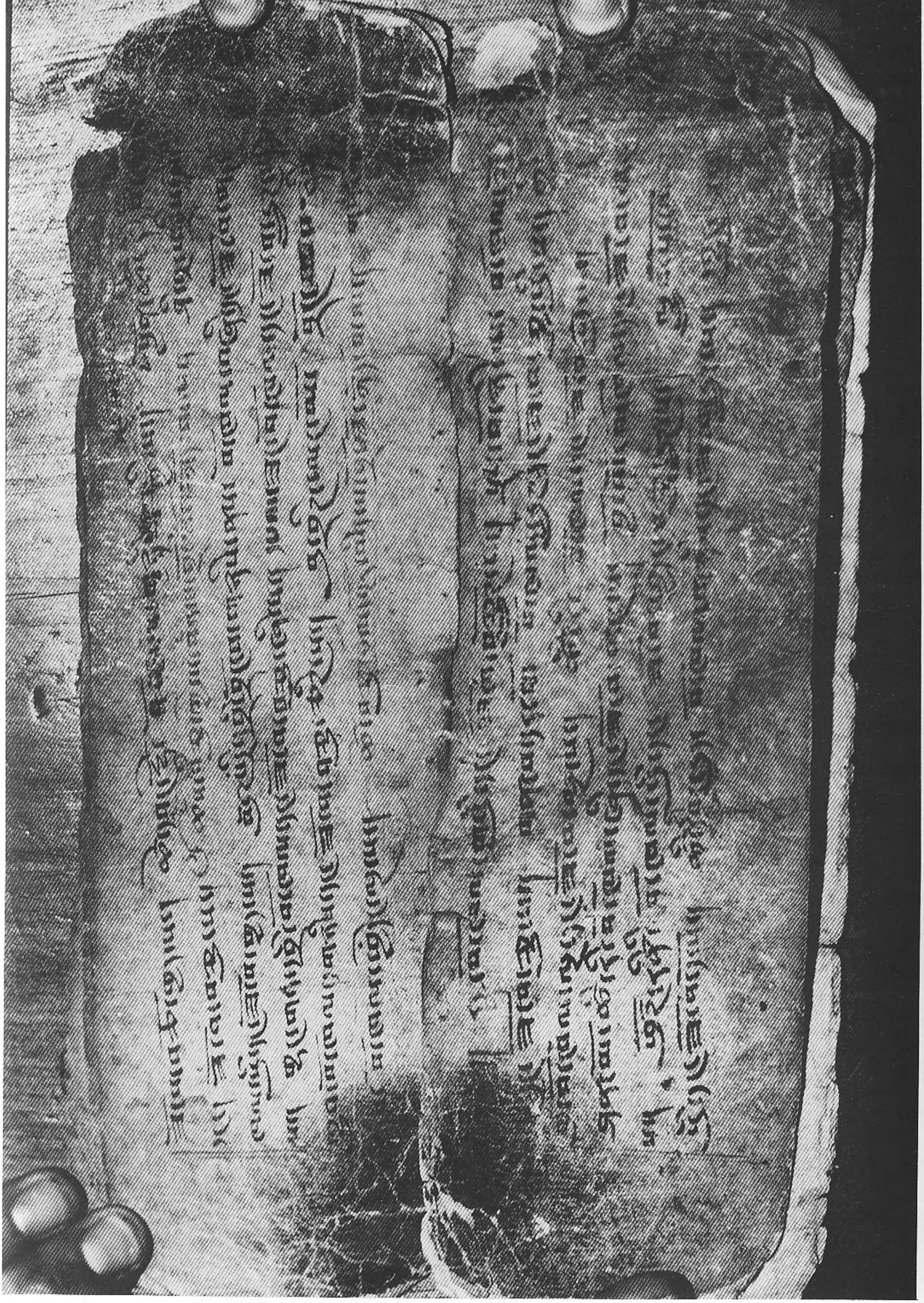


Plate XII

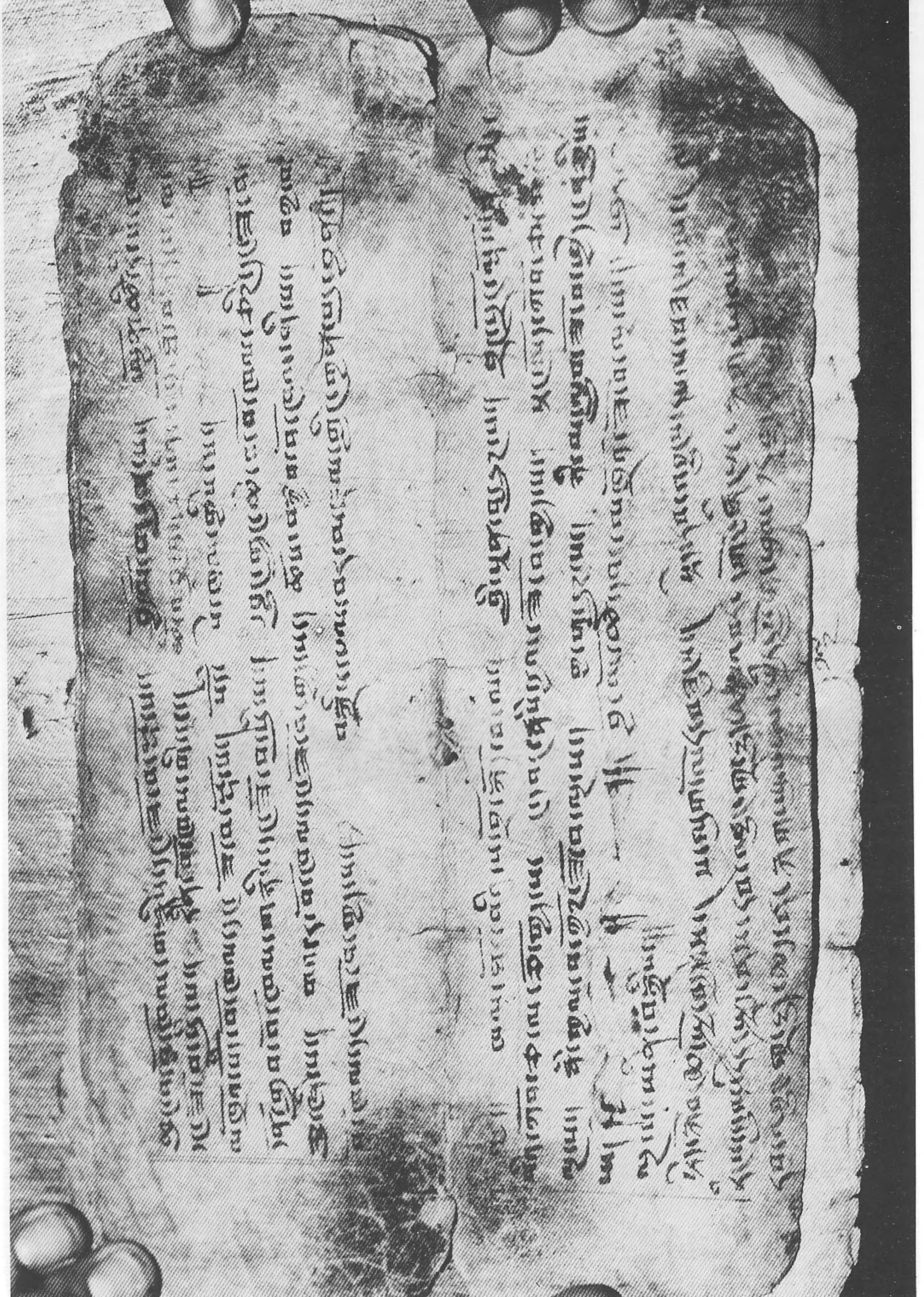


Plate XIII

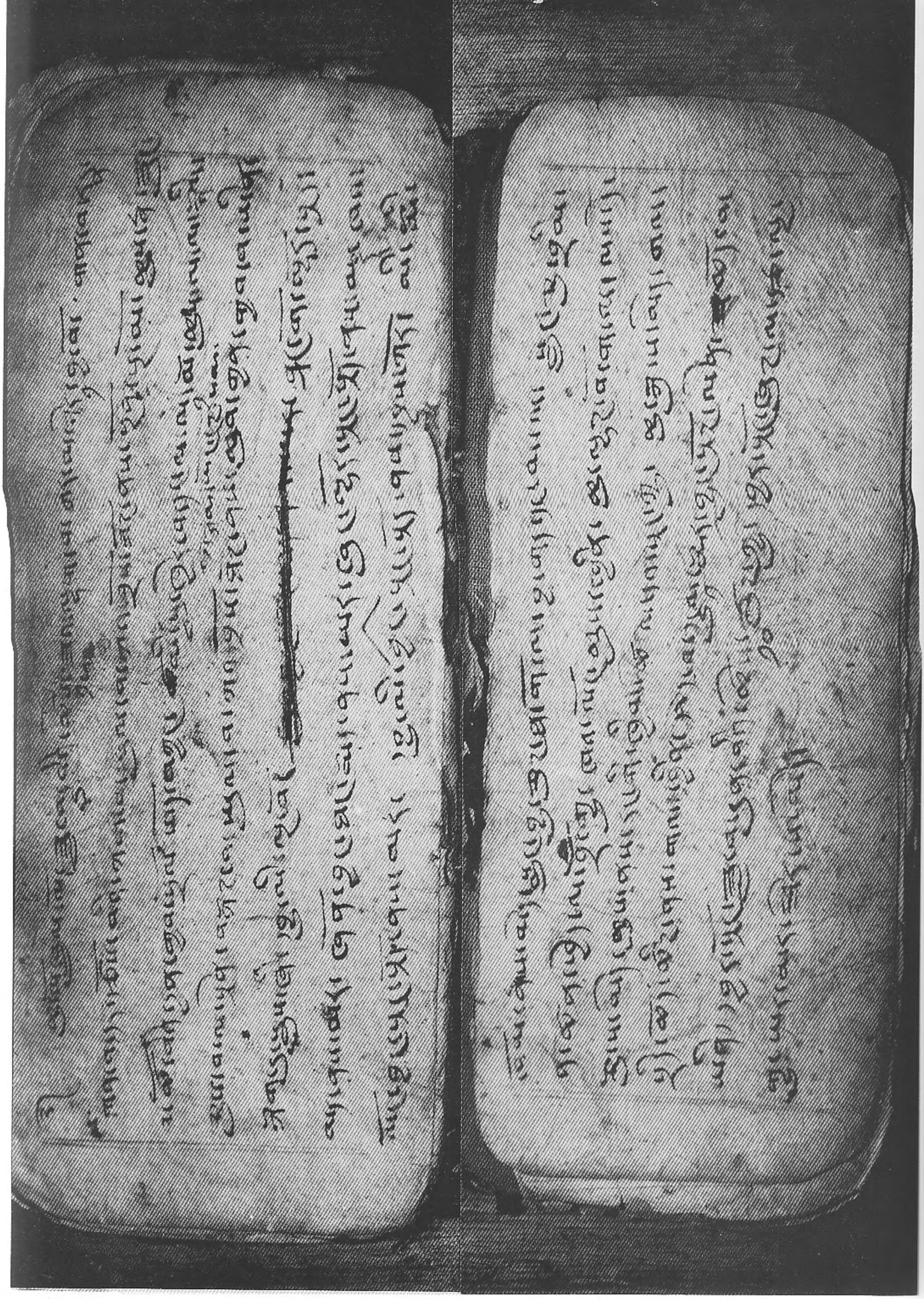


Plate XIV

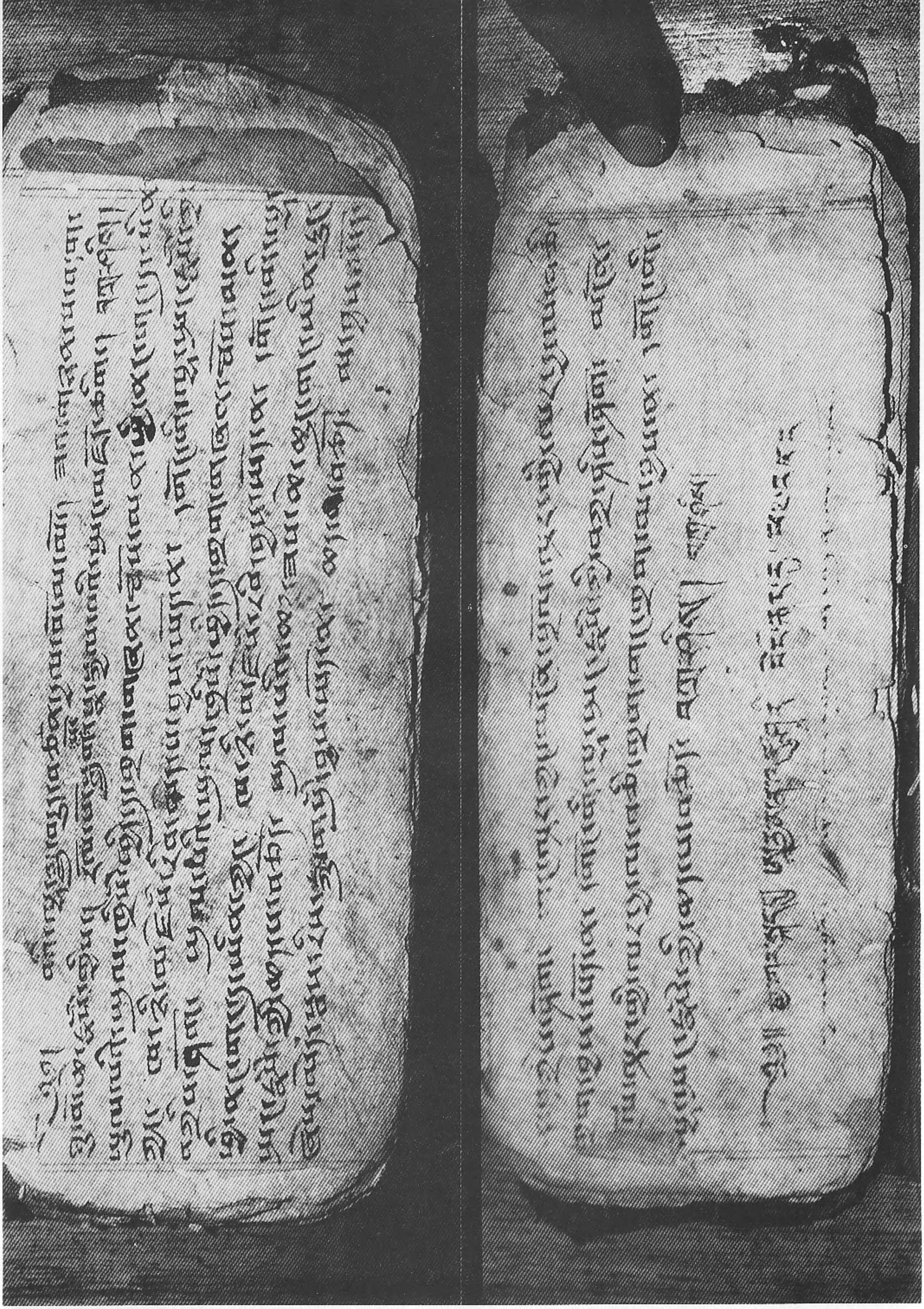


Plate XV

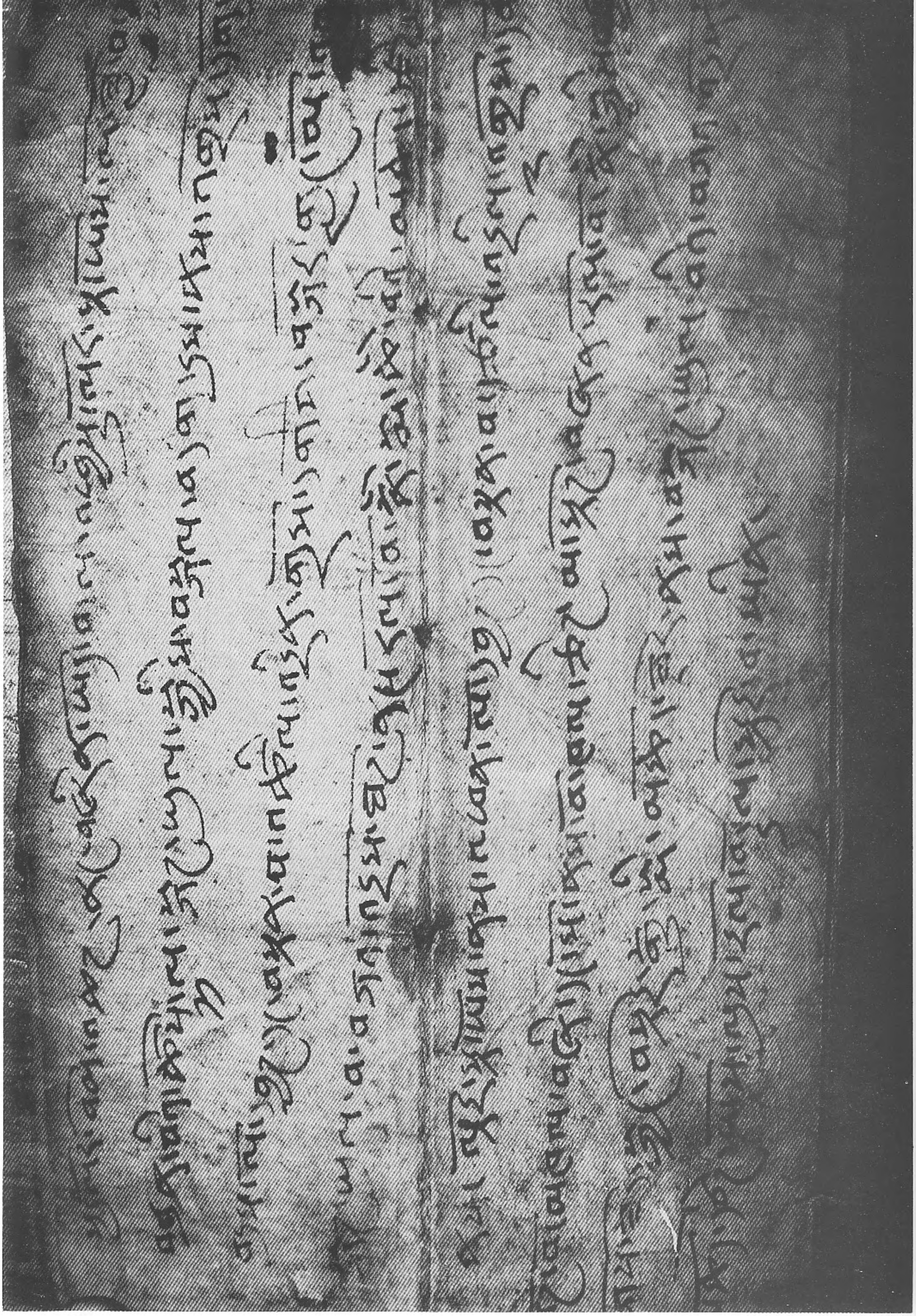
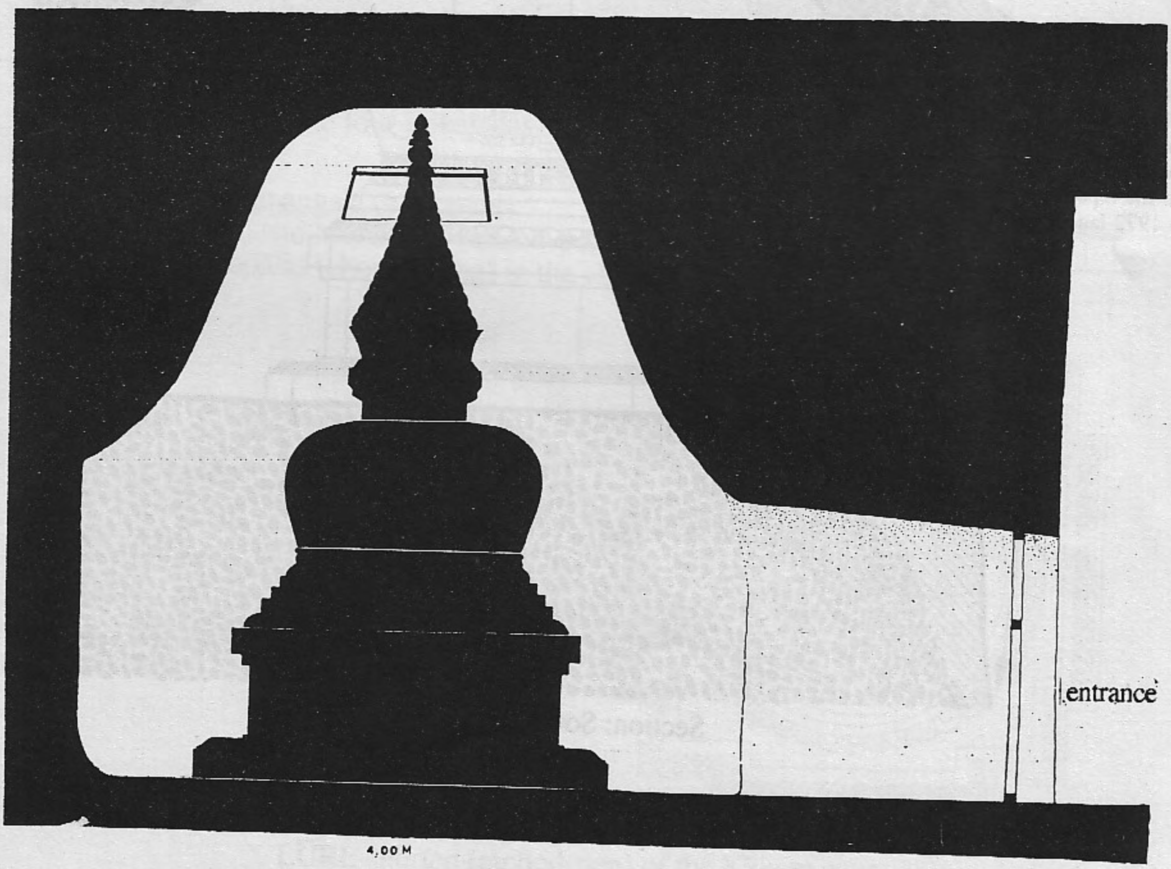


Plate XVI

The Chörten of the Cave at Luri

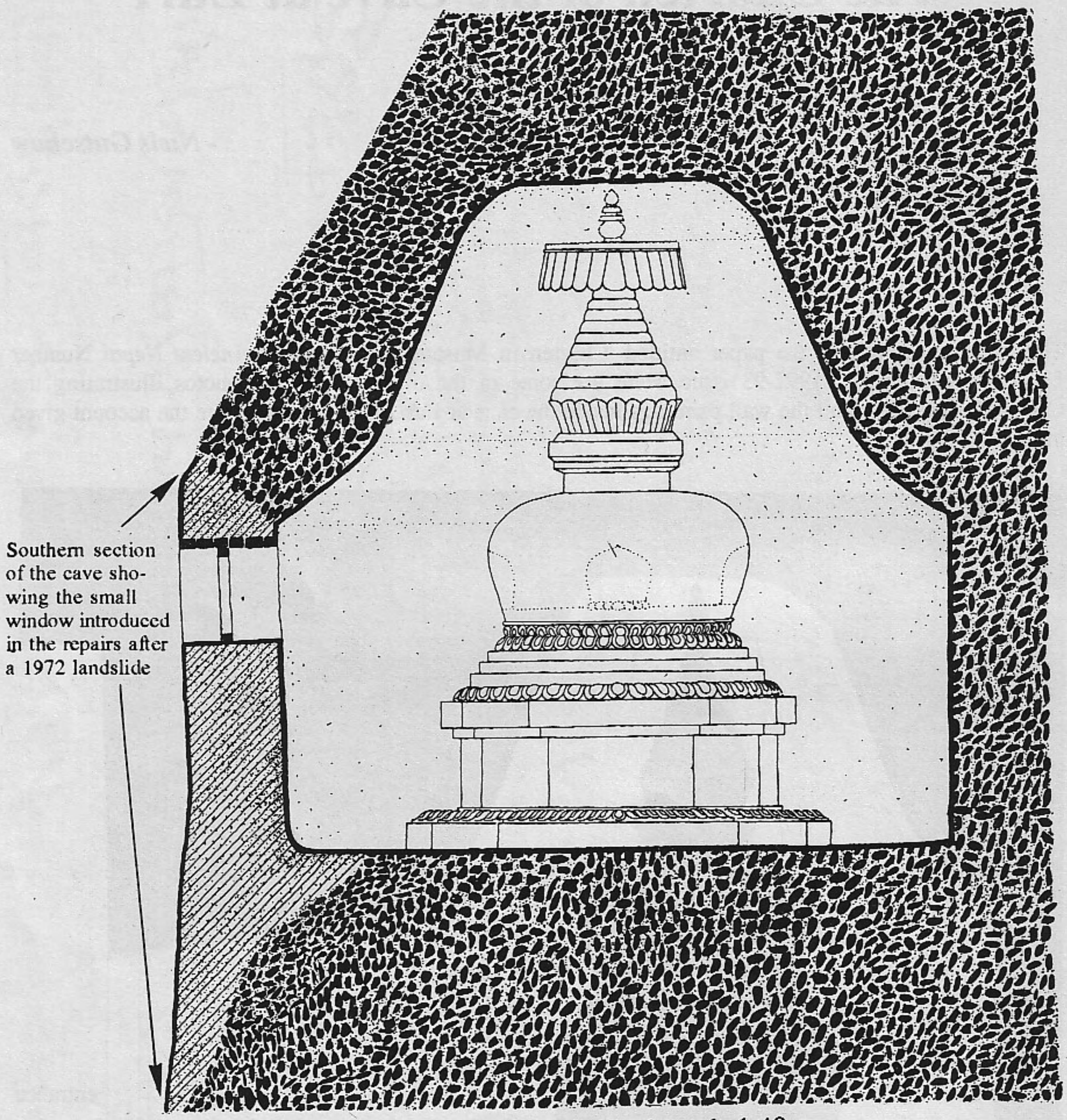
- *Niels Gutschow*

This is a supplement to the paper entitled 'Chörten in Mustang' published in *Ancient Nepal* Number 130-133, June-January 1992-93 issue. Here are some of the drawing and the photos illustrating the Chörten architecture and the wall paintings inside the ca ·e at Luri. They will illustrate the account given in the said paper.



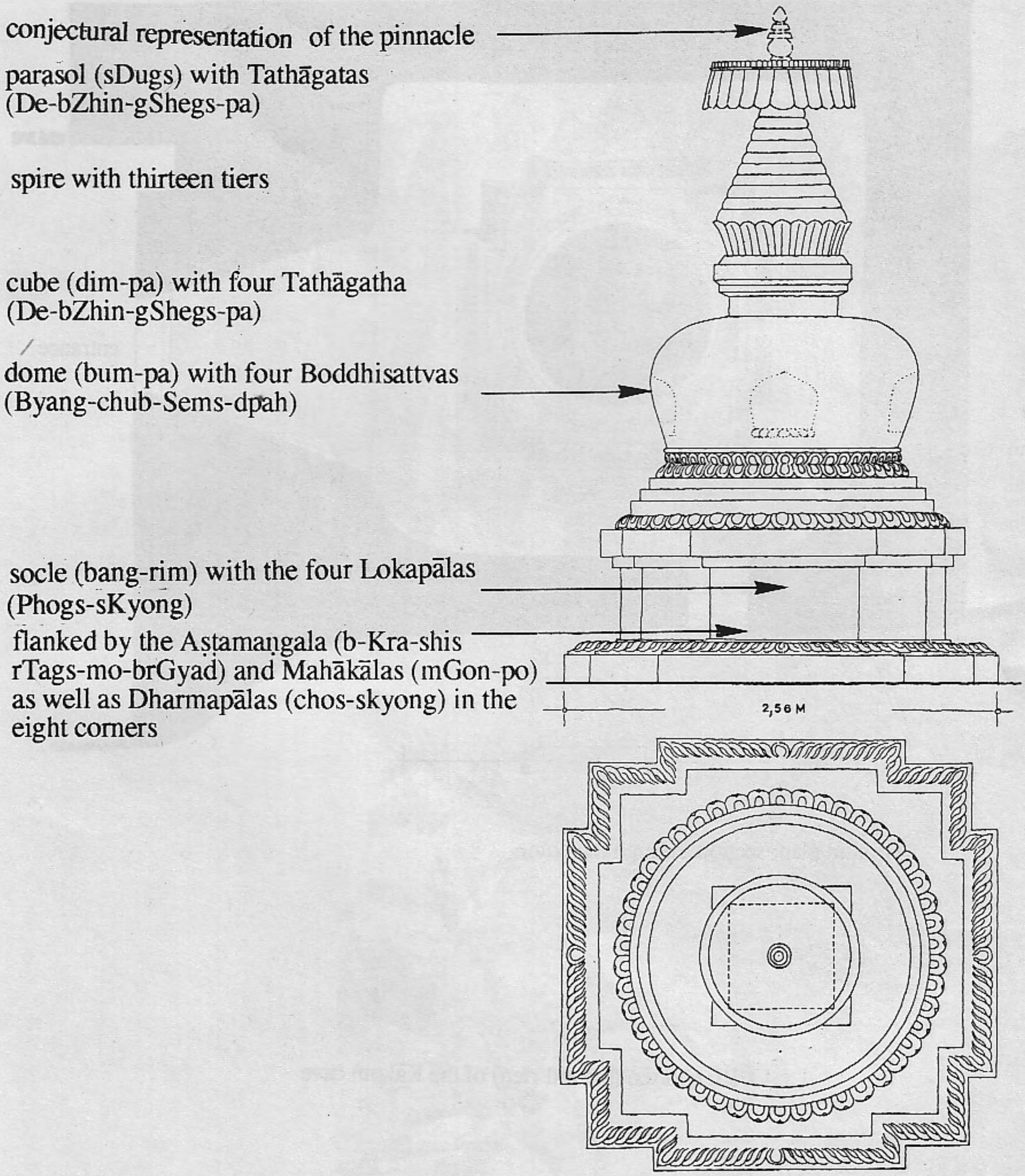
Section: West-East, scale 1:40

LŪRI: chörten (mchod-rten) of the Kākom cave

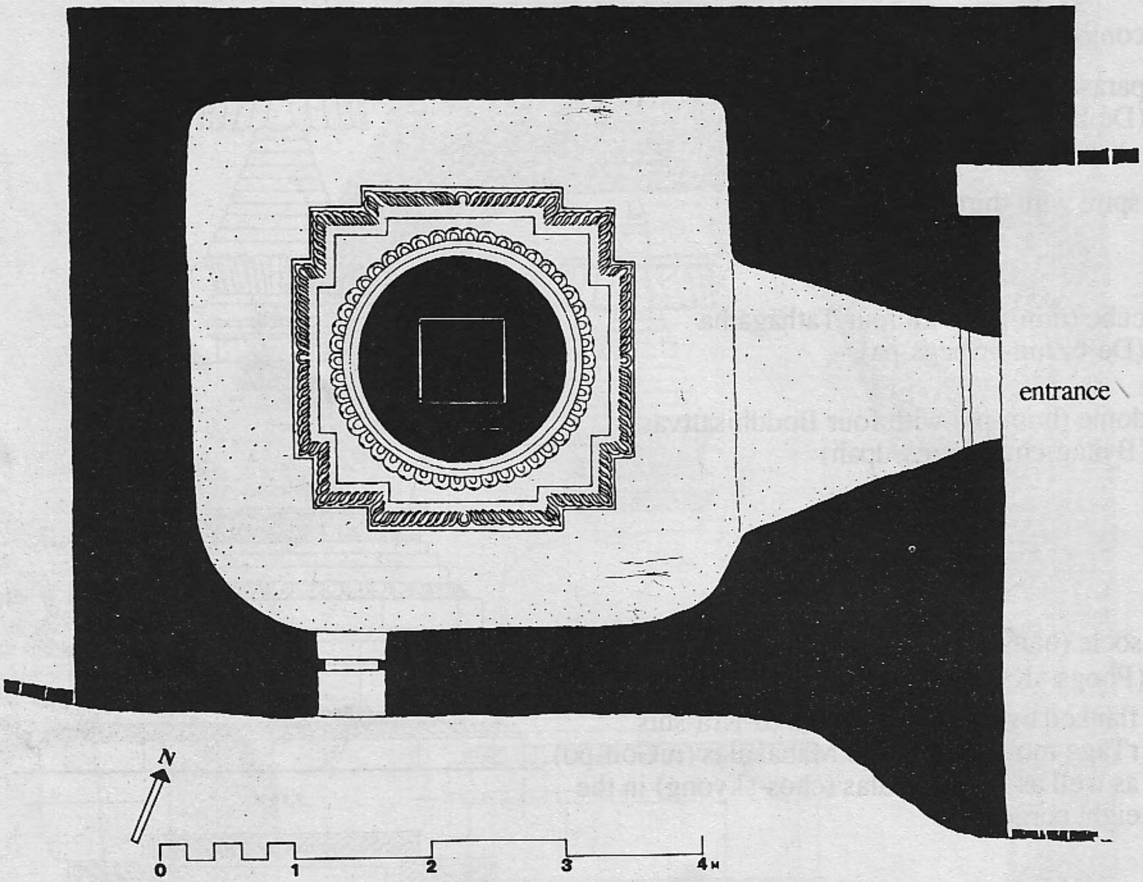


Section: South-North, scale 1:40

LŪRI: chörten (mchod-rten) of the Kākom cave

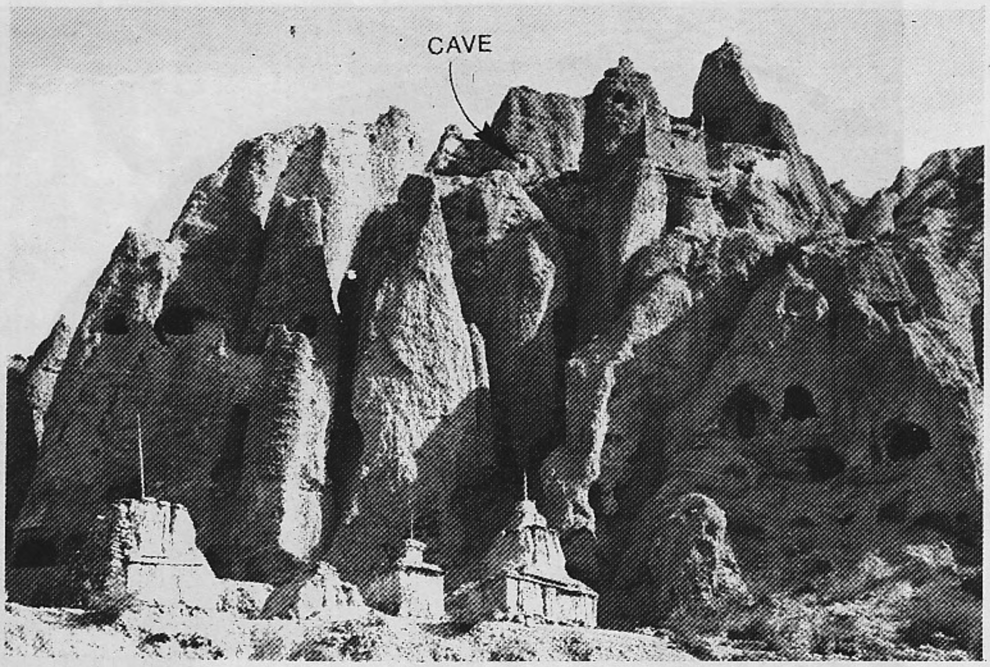


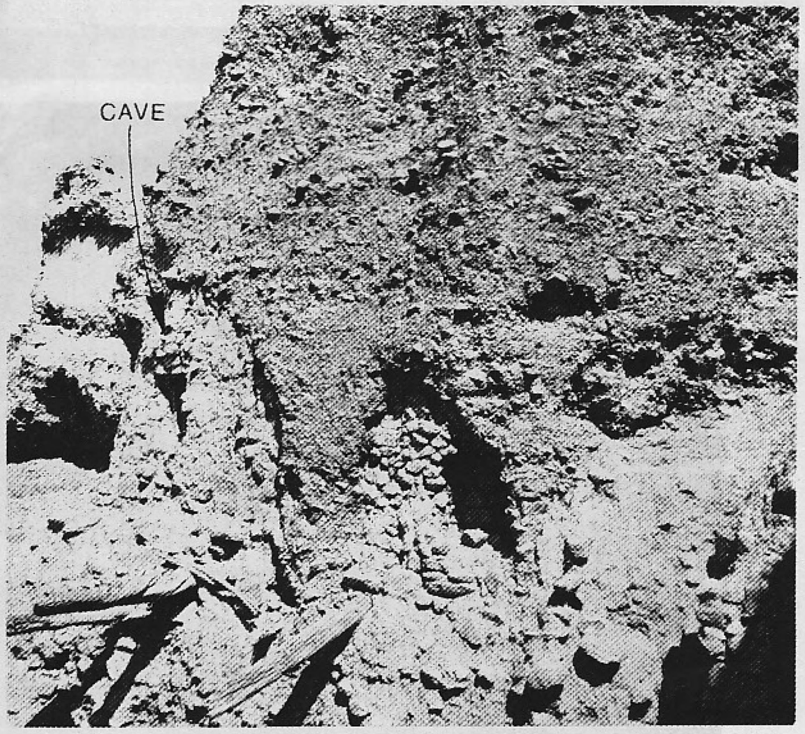
LŪRI: chörten (mchod-rten) of the Kākom cave
Elevation and top view, scale 1:40



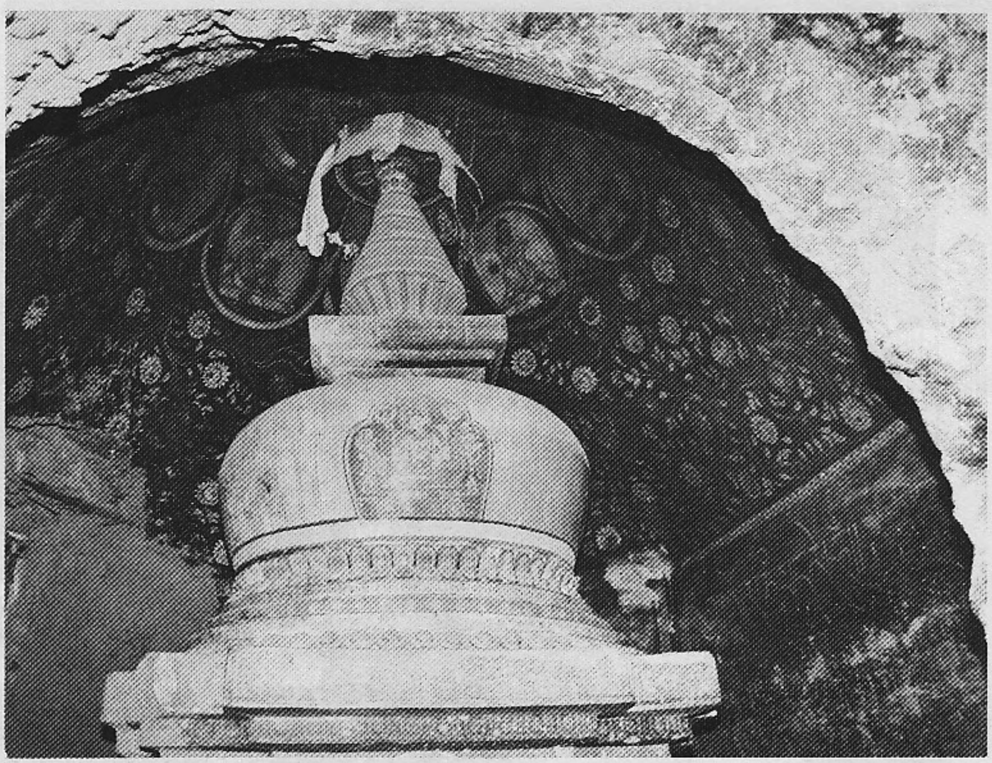
Ground plan; section through the dome

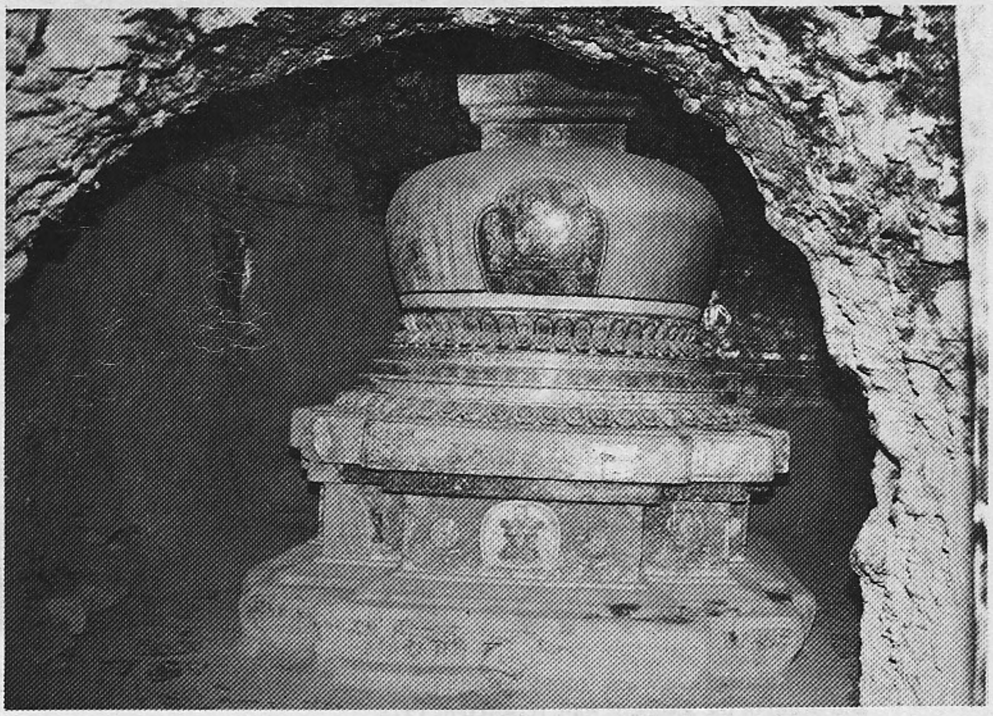
LŪRI: chörten (mchod-ṛten) of the Kākom cave



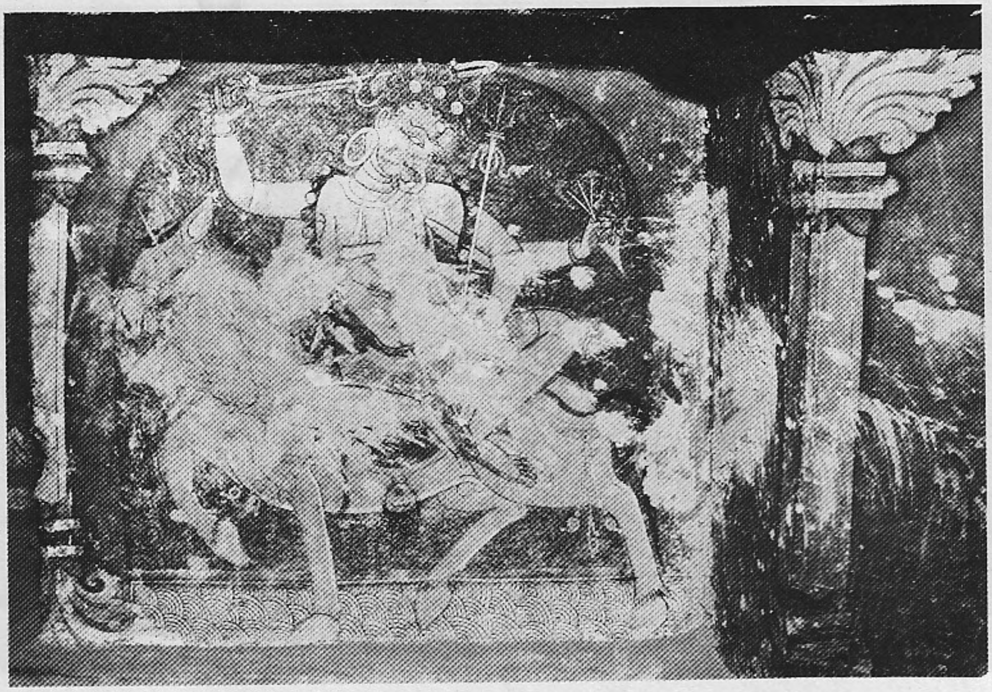


LŪRI: Kākom cave, view from the south (above) and detail of the southern wall, repaired in 1972 Photographs: Gutschow, April 20, 1992



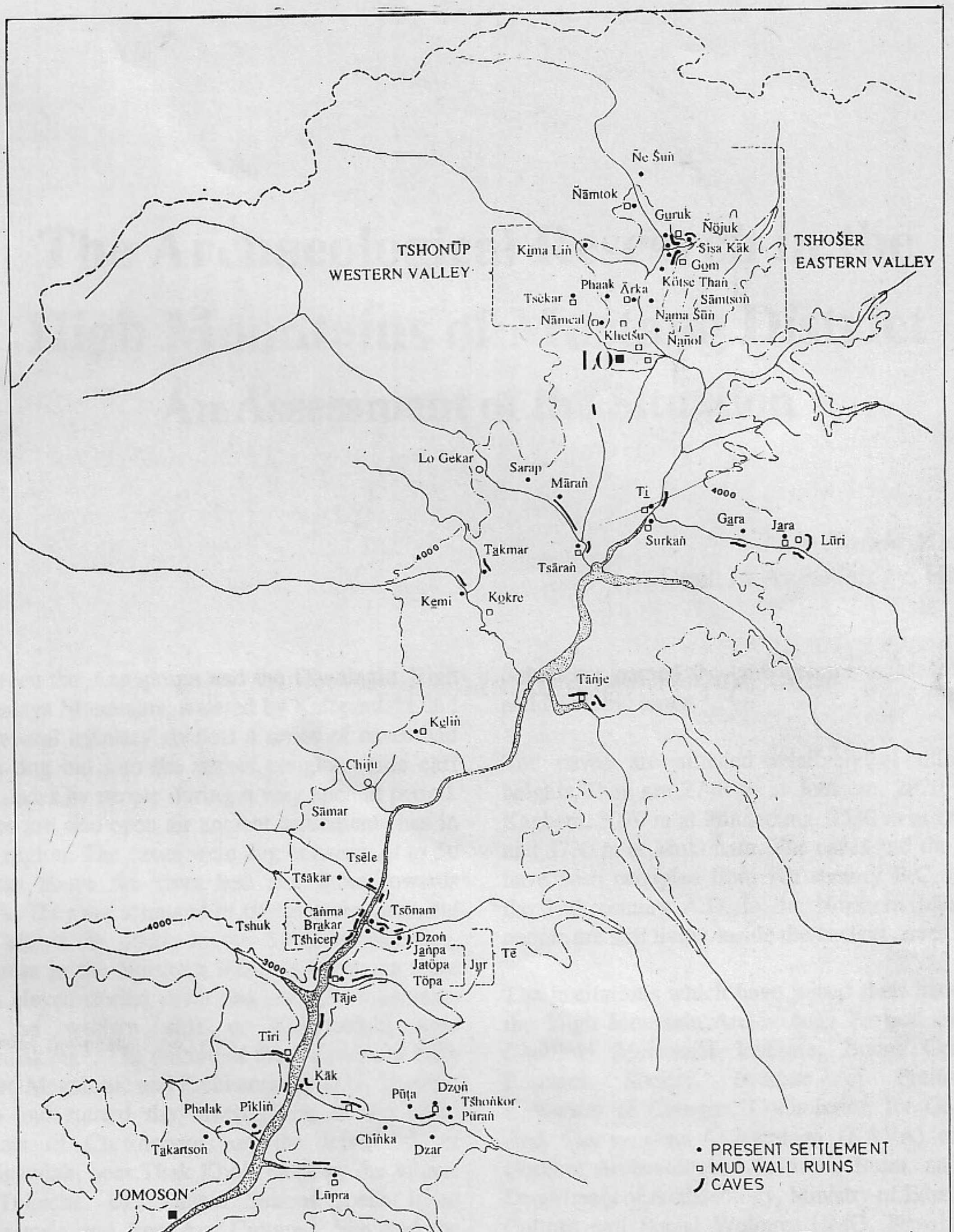


LŪRI: chörten (mchod-rten) of the Kākom cave Photographs: Gutschow, April 20, 1992



LŪRI: chörten (mchod-rten) of the Kākom cave. Photographs: Gutschow, April 20, 1992.
Above: a Dharmapāla with sword, skull, lance, and dagger on a horse in water. Below: Vaiśrāvaṇa (rNam-thos-sras), the guardian of the North with his banner.

LŪRI: Paintings of the Kākom cave
Above: head of Vajrapāṇī on the western wall of the cave Below: Vajrasattva, painted on the northern side of the dome of the chörten (mchod-rten)



Identification of the cultural heritage of northern Mustang based on an exploratory architectural survey April 7 -23, 1992 by Niels Gutschow

The Archaeological Research in the High Mountains of Mustang District

An Assessment of the Situation

-Tara Nanda Mishra
Dept. of Archaeology, HMG.

Between the Annapurna and the Dhaulagiri High Himalaya Mountains, watered by Kaligandaki and its several tributary rivulets a series of caves had been dug out into the massif conglomeratic cliff rock-faces by people during a very ancient period. These are also open air ancient settlement sites in that region. The caves were dug between 20 to 50 meters above the river bed and faces towards south. They are arranged in one to seven tiers, cut one above the other, in the Southern Mustang, whereas in the Northern Mustang there are more than eleven storied caves dug over the mountains on the western side of Kaligandaki near Gumbakang[1]. The culture of those caves has been called Megalithic and Prehistoric by D.N. Tiwari[2], who had started the investigation of the cave-burials of Chokhopani, on the left bank of Kaligandaki near Thak Khola close by the village of Tukuche. Dr. Angela Simons spells it as Prehistoric and Iron Age Culture[3]. She had the chance of exploring and excavating many burial caves in the Thak Khola and the settlement caves on the higher altitude of Muktinath. Prof. D. Schuh has named the cave culture as Megalithic and Neolithic tombs[4].

The caves are situated relatively at different heights. They are 2740 m at Jomsom, 2820 m at Kagbeni, 3070 m at Phudzeling, 3580 m at Dzong and 3730 m at Muktinath. The caves and the sites have been occupied from 9th century B.C. up to the 17th century A.D. In the Northern Mustang people are still living inside the ancient caves.

The institutions which have joined their hands in the 'High Mountain Archaeology Project' are the Coulfield Meisezahl Institute, Bonn, German Research Society, Institute of Prehistory, University of Cologne, Commission for General And Comparative Archaeology (KAVA) of the German Archaeological Institute, Bonn, and the Department of Archaeology, Ministry of Education Culture and Social Welfare, HMG, Nepal. The agreement for the archaeological explorations and excavations in Mustang had been signed in 1991. Under the agreement the actual excavation works

began from 1992. The subjects of studies under this project are: Settlement archaeology, Historical Settlement, Geography, Ethnology, Architecture, Dendochronology, Photography, Ethnology, Architecture, Photogrammetary and Cartography. This programme of study has been planned to be carried out in the Mustang district (in Nepal) and in the Valley of Indus near Laddakh (in India). The study of Mustang district is important because it is the meeting point of Hindu (from the South) and the Buddhist religions as well as in this region the two races of the Aryans and the Mongols have met and mingled. It had been beautifully sketched by Dr. F.K. Ehrhard about the Tibetan sources on Muktinath, often mentioned as Mu-mceni-Seta or Mu-Khun-Kseta in the Hevajra Mulatantra, where there were more than hundred springs and was the famous holy place both for the Hindus as well as the Buddhists.

Beginning Of The Exploration Works

The first information about those caves had been given by Prof. G. Tucci of ISMEO, Italy. He had explored the region between 1953-55[5] and had briefly described about those caves. Dr. Harka Gurung, a Nepalese geographer had also collected valuable information about the caves in the Southern and the Northern Mustang[6]. An Indian scholar Swami Pranavananda had explored the area near Kailash-Manasarovara known to the local people as Purang, in the valley of Karnali river. In 1966 Lama Anagarika Govinda had also published some data about those caves. In the eastern Tibet Chinese scholars had explored and excavated some Neolithic settlements between 1978-1979. Another China-Japan joint team had given some information about the area in 1986. Dr. D. Schuh had explored the caves in 1986-1987. Archaeologist Dr. Angela Simons had been engaged in the explorations and excavations of the caves and some open air settlements sites from 1990, which is still continued.

Summary Of The Discoveries

The Caves, Sites and the Important Finds

D. N. Tiwari in 1985[7] found from the destroyed caves at Chokhopani two Copper or Bronze anthropomorphic figure-like objects, copper rings, wooden spoon, stone arrowheads, thin circular shell beads, cowrie shells, musk-deer teeth (used as necklace), human bones, handmade grey wares, pottery of Red and Buff colours, and Twin joined vases having inter connection holes. In 1991 Dr. Schuh had collected about one hundred pots which were ill-fired and had incised as well as cord decorations from the three funeral caves. A. Simons had found in 1992, 21 human skeletons which belong to 7 adults, 11 infants and 2 young persons. The grave furniture found from the caves were shell pendants, musk deer teeth necklaces, beads of bone, glass and achat, tubular bronze beads, carnelian beads, bronze object with stretched arms, bronze earrings, a birch bark (tree skin) pot and an iron object. Some of the vessels were full of meals offered to the dead persons. Dr. Angela's team in 1993 (March-April) had collected grey ware potshreds, thin-walled red pots having mica particles on the surface, bodkins or awls of schist stone, a carnelian bead, an iron object, tubular bronze beads and micro glass beads from the burial caves near Mebrak. The team had also found two perforated full vessels and five baskets. A document with Tibetan script was collected from a cave. Similarly, few wooden purbhas, ritual iron objects and a clay figure of house were also found. In this year Angela collected for the first time near Mebrak (location 42) three occupation stratas, with gaps in occupation between phase 2 and phase 3. The other important finds were bamboo arrow shaft, Iron arrowhead, leather bags, barbed iron arrow head with single tang, an iron knife blade, spinning whorl of deer antler, unspun animal hairs, wooden handle of a tool, one carved cam-barb, and fragment of a mat or basket.

Pottery

Handmade pottery of grey ware mostly ill-fired, red and ocher coloured ware and pots with lot of mica were discovered. There were big globular vases, storage jars (height 60 cm), cooking pots, water pots with pipe spouts, vases with flat and solid circular handles on the opposite side of the spout. A flask with spout and ring base, some pots with cord impressions, some with triangular or semi-circular incised decorations were found. Evidence of repairing pots tying the broken portions with thread of goats' hairs and smearing with resin had been noticed.

The Architectural Features of the Caves

As it has already been noted that the caves had been dug into the steep rock faces mostly facing the sun and above the rivers, they were cut into six to eleven tiers. From the impressions still preserved on the walls and the ceilings it has been noticed that they had been dug or cut with crescentic weapons, like edges or chisels which were 1 cm to 14 cm wider. The inner faces were plastered with clay mixed with husk. The size of a cave was 12 m long, and 2 m to 4 m broad, the height being 1.20 m (Angela, Ancient Nepal No. 130-133, p. 2). Another cave was 10 m in length. There were doorway openings, windows (facing south and measuring 40X50 cm) and semi-circular nitches 20 to 40 cm above the floor cut 40 cm into the walls. The rooms varied from one to twelve in number and the partition walls made of mud bricks. Along the cave walls sun-dried brick walls were constructed, which has also been reported from Purang (opposite Mansarovara) caves. At places there were stone massonary built to support the wooden galleries. To go upside on the upper caves within ladders or sometimes steps were cut within the caves. At places wooden galleries connected the several rooms of the caves. Most probably, these wooden members were added during the medieval periods. In the late phases the caves were occupied by the Buddhist lamas. Inside a cave (Schuh, Ancient Nepal. No. 130-133, fig. J) there was a raised platform and some of the cave passages were partially blocked by bricks walls and small passages were left.

Inside many caves there were box or domed (Hemispherical-size 60 cm X 50 cm) grain storage bins made of sun-dried bricks and nicely plastered with clay. The bricks were of different sizes, which indicated the different phases of constructions. In a cave room there were square holes made to insert wooden or bamboo nails used for hangings. There were U-shaped or square hearths made with clay bricks having clay plaster. In a cave an altar-like structure of mud bricks was made. There were animal bones, metal objects, wooden purbhas and clay horse figure. There were stone walls resting upon the wooden beams (Angela, Ancient Nepal, 130-133; p. 2). Dr. Schuh has noticed that the upper three stories of the caves were meant for living, middle caves used as storage caves and the topmost might have been utilized as worshipping sanctuaries, as they were very small. There was also a watch tower built near the caves at Marjhong along the river Lo near Lo Mangthang. Thus we find that the caves had both the architectural features of rock-cut as well as structural constructions.

The Open Air Sites or Habitational Mounds

At two areas near Muktinath, close to Khingar, Prof. H.G. Huttel excavated in 1991, a mound which was 130 m long, 80 m broad and 11 m high. The excavator had dated the site between 5th to 15th century A.D. He has noticed some similar pot shreds discovered at the place which had been excavated at Harigaon in the Kathmandu Valley belonging to the Lichchavi period. Some of the pots reported by the excavator (Ancient Nepal. No. 134, p. 14, Nos. 3, 6, 7, 8 and p. 15, No. - 1) may be dated between 2nd century B.C. to 2nd century A.D[8]. Dr. Angela Simons had also excavated ancient ruins near Kagbeni[9], 30 m above the river Jhong, below a cave system which is 70 m above the ruined site. Apart from different phases of constructions, the excavator had noticed the

foundation of 34 houses. The C 14 dating from the B.C. 363-200, another dates from different upper stratas were 13th cent. A.D. and 17th A.D. (top most layer). From this excavation bronze ornaments and schist chisels similar to the Chokhopani caves were found. This proves the occupation at the site in a very early period as well as hints at the relationship between the open air sites and the cave dwellings which were partially contemporary.

Food Materials of The Cave Dwellers And The Sites

According to the botanist of the team, Mr. K.H. Knoezer there were varieties of barley, wheat and buckwheat found from the caves. About 61 kinds of grain seeds both wild and cultivated types had been detected. Apart from these grains the meat food taken by the ancient settlers were of sheep, goat, cattle, yak, horse or mule and deer[10].

Wheat had been grown in the Himalaya and the Hindu Kush region from very ancient times and the areas might have been the place of origin for wheat. This has been proved by the Indian scientists[11] as well as a Japanese specialist, Mr. Matsuoka[12], who has proved that the two varieties of buckwheat were the traditional crops of the Himalaya region and are the oldest crops in the world. The wheat found from Iran and Jarmo Jerico predates Indian by 4000-5000 years. They have been excavated from Chirand (Bihar) & Burzahom (Kashmir) in the Neolithic period; Harappa, Kalibanga, Mohenjodaro in the Harappan period; Ataranjikhera in the OCP period; at Inamgaon, Kayatha, Navadatoli, Songaon in the Chalcolithic period; Bhokardan, Nevasa, and Ter in the early to late historical period.

The two varieties of Himalaya covered barley (Somane and Singtok) have been noticed by Mr. Nakoa to be still cultivated in Kagbeni. And a variety of Tibetan naked barley is grown in the Northern Mustang. Barley has been noted from the early Indian sites like Chirand (Neolithic pd); Harappa, Kalibanga, Mahenjodaro (in the Harappan pd), and Ataranjikhera (in the OCP culture). The world's earliest records of cultivated barley dated 8000 B.C. come from west Asia, where its wild progenitor is also found[13]. At Mehargarh (Pakistan) the people cultivated barley during the 7th millennium B.C.[14].

Regarding the meat used as food by the cave dwellers an idea can be formed from a detail analysis made by Prof. A. Vonden Driesch from the Khinga excavations site. Among the domesticated animals, bones of sheep, goat, cattle, hybrid of cattle yak, donkey, horse, mule, pig, dog, cat, and chicken were found. The wild animals were Blue Sheep, Musk deer, Bodak, Rat, Tree Mouse, Woolly hare, unidentified Rodents, Himalayan Vulture, Rock Pigeon, Cough, Mountain sparrow and Snow trout. Among the above mentioned animals some must be the older species existing during the early period of the cave settlers and some must have been introduced to the region at latter dates. In the caves some split bones, indicating the use as food, had been found.

The evidence of goat in the Himalaya and the Sub-Himalaya belt had been found from the upper Paleolithic period. Similarly, the bones of goat had been excavated from Pre-Harappan sites like Quetta, Zhob-Loralai and the matured Harappan sites. The remains of sheep had been collected from Mesolithic period and at Hallur (Deccan) in the Neolithic period[15].

The C14 Dates

Most valuable study of the Burial and the Open air sites had been the analysis of C14 samples collected from the explorations as well as the excavations. Angela Simons has collected many organic samples which had been dated and being illustrated in the following lines. Whereas the C14 dates from Huttel's excavations near Khinga has

not been made available.

(1) **1992 work in the Burial caves at Chokhopani** Birch bark vessel used for C14 dating by Dr. Kromer, in the C14 lab at Heidelberg, gives the date as BP 2575 ± 19 (Cal. B.C. 801-792).

(2) **Muktinath valley, Settlement cave at Jharkot** gives a C14 date of BP 2615 ± 25 (cal B.C. 810-799). This is similar to the date available from Chokhopani burial caves.

(3) **A pit below a stone stair tower with animal bones** and pottery gave the C14 date as BP 2165+ = 44 = B.C. 805-766.

(4) **Open Air Site of Jhong,** gave the date from Charcoal Samples as BP 2170 ± 30=B.C. 363-200. The upper layers of the same site gives the dates of 13 A.D. and topmost layer as 17th A.D.

(5) **From a ritual cave hearth** the C14 date available ware A.D. 1008 ± 24 and A.D. 1012-1028.

(6) **In the Muktinath Valley near Dzong, F system, location 3, D. Schuh and Gebauer collected samples from a hearth** which gave the C14 date of A.D. 811 ± 72.

(7) **Location-2,** Charcoal from a hearth in a cave gave C14 date as 289 ± 68 B.C. (K.N. 4360 Nepal, 1990).

Plant temper from a brick gave the C14 date as A.D. 557 ± 20 (K.N. - 4358, Nepal, 1990).

A Comparative Study of the Important Antiquities from Mustang Caves with the Neolithic and Megalithic Sites in the Sub-continent

The early settlers of Mustang have been called Megalithic and Neolithic by Mr. Tiwari[16]; Dr. Schuh named them as Neolithic and Megalithic[17]. According to A. Simons this was Prehistoric and Iron Age culture[18]. The writer of these pages saw some Neolithic, Chalcolithic and Megalithic connection with the Mustang cave settlers[19] on the account of their channel or spouted pottery, the heavy anthropomorphic figures like tools, copper bangles and bronze antiquities found from the caves. All the above scholars agree that the earliest phase of the Mustang caves belong to the Neolithic period. Let us now have a look into the antiquities found from the Neolithic and Megalithic periods in the sub-continent.

The Neoliths of North-Eastern Region

Daoji Hading (North Chachar hills of Assam)

At this site Neoliths with pottery had been discovered. The implements were shouldered celt, rectangular adzes, axes, chisels, corn grinders, mullers, milling trough of shale or sandstone. The pottery were cord-marked, incised herring bone design, basket design on grey ware, incised and stamped ware as well as the plain red ware.

Sarutaru (Gauhati, Assam)

From this site axes of shouldered and rounded butt end, handmade buff greyware to grey ill-fired & cord impressed ware were found.

It has been marked that the shouldered celt and the cord marked pottery are widely found in the East and South-East Asia. While the red ware shows affinities with the red pottery of yellow river valley extending up to Sichuan. The Neoliths of this region have been compared with the late Bacsonian of South-East Asia with influences

from Sichuan and Yunnan[20].

Neoliths of Mid-Eastern Region

Chirand And Chechar Chirand is situated on the confluence of Ganga and Ghagara the saran district whereas Chechar had been found on the northern bank of Ganga in the Vaisali district both in Bihar State of India. Three-fold cultural sequence had been found from these sites, which are Neolithic, Chalcolithic and Early Historical periods. The artifacts discovered were bone and antler, needles, bodkins, drills, points, borers, pins, celts, double-forked pick-axe with a curved socked for hafting (wooden handles) scrapers; chisels, awls, tanged and socketed arrowheads. The ornaments discovered were pendants, earrings and combs; T.C. objects were beads, steatite and chalcedony beads, bangles, serpent and bird figures. Chirand produced during the late Neolithic period beautiful beads of carnelian, agate, faience and steatite. Microlithic tools and series of hearths were also found. Among the food stuff were rice, wheat, six towed barley, lentil and green gram.

The pottery from the sites were red, grey, black and red wares, generally with burnished surface. The shapes were straight sided deep bowl, storage jars, basins, spouted bowl, vase with broad mouth and carinated neck. Some grey ware have designs like criss-cross lines, oblique, horizontal or vertical paralled lines, thumb and fingure prints as well as corded designs. The C14 dates of Chirand in the Chalcolithic period has been 1100-650 B.C. whereas its date during the Neolithic period is fixed between 2375-1513 B.C.

Mahagara

The site is in the Allahabad district of U.P. State and is a single period Neolithic site representing six structural phases. The antiquities discovered from the site were - Neolithic blades, microliths, stone querns, mullers, sling-balls, celts, bone arrowheads, t.e. beads, slashed and split animal bones with a cattle house. There were four types of pottery which were handmade. They were (A) Cord impressed, (B) Rusticated, (C) Burnished red and (D) burnished black. The pots were - bowls, globular jars, spouted bowls, handis (cooking vessels) and basins. The date of the site according to B. K. Thaper can be placed around 2000 B.C.

Koldihawa

This site had also been located in the Allahabad district of U.P. State and has three periods of cultural deposits - Neolithic, Chalcolithic and Iron Age. The Neolithic phase contained archaeological objects like ground stone tolls, microliths and handmade pottery. The pots found were cord-impressed, rusticated and burnished wares.

Sites In the Kashmir Valley

Let us now study about some of the sites situated in the Valleys of High Himalayas on the West of Mustang. There are two important sites excavated near Srinagar. Among them one is Burzahom situated at 16 kilometer north-west of Srinagar and the other is Gubkral which is 41 km. south-east of Srinagar. Burzahom had three-fold cultural sequence beginning from Neolith, followed by Megalith and Historical periods. At Gubkral three phases of Neolithic periods had been discovered. In phase IA they used to collect food but also cultivated wheat, barley, lentils, peas and clover. They eat the meat of wild animals like ibex, bear, wolf as well as domesticated cattle, goat, and sheep. Utilized underground pits of circular, oval, rectangular and square shapes for construction of huts. The shallow pits treated with red ochre paints were used as grain storage bins. They also made rubble wall and mud platforms. The bone tools used were points, needles, harpoons and scrapers. The stone tools of this phase were axes, adzes, drills, picks, pestle, pounders, quern and mace heads. They also made tools of antler's horn.

In phase I B, they still lived digging pits. T. C. pots were made with hands. The pottery are thick greyware, fine greyware and gritty dull red ware. The shapes were globular jars, bowls and basins usually having mat-impressions. The bone tools they used were harpoons, needles, awls and arrowheads. In stone, chisels, hoes, adzes were discovered. Circular hearths were also found. In phase I C, which was the last phase of Neolithic period, they made bone points, needles, double edged picks, spindle whorls and rectangular or semilunar stone harvesters. The knives were made of stone and bones. They had holes to fasten wooden handles. T. e. bangles, Cowrie, shells and pendants of light green jade stone were the other finds from the site. Copper arrowheads, bangles, rings and pins were the metal objects of this phase. The main pottery types were high necked jars, bowls and basins made of burnished grey ware. The C14 dates range between 2400 - 1500 B. C.

It will be here well justified to mention that in the Deokhuri - Dang valley of Western Nepal few years ago Dr. Gudrun Corvinus of Erlangen University of Germany had discovered Neolithic settlement sites with polished celts associated with stone blade and cord-marked pottery of light red colour in Dang and Tui Valleys.[21]

Megalithic Sites Compared To Mustang Caves

There are different categories of caves in Mustang such as the Burial caves, the Residential caves, Storage caves and the Ritual caves. D. Tiwari and A. Simons have already reported on the community burials found in the caves on the bank of Thak-Khola between Chokhopani and Marpha. We have an example of Megaliths from the Leh Valley from where comparable antiquities with the Mustang burial caves had been reported.

The Leh valley Megaliths have cists or chambers built of dry stones with steps leading into it. The cist is covered with several undressed capstones. The chamber had multiple fractional burials. About twenty skulls were found in one grave, placed upon the wooden shelves. They belong to the dolichocephalic (long headed) people. The skulls were kept on the shelves, whereas other bones were placed in the pots. All the pots were hand made. They were jars with flaring rim and short shoulder, loop handled bowls and bowls without handles. Pots painted in red pigment and incised designs like spirals, ladders and zig-zag bands. Among the antiquities were few bronze weapons, used in the devil dance of the Himalayan tribes. The burial also contained bronze beads, pendant, buttons, spouted vessel, a bracelet and a seal bearing cross and circle design[22]. At several places of the Himalayas as at Leh, the hills of Dehradun and even inside Tibet simple slabbed cists, sometimes containing collective burials have been reported[23]. It is interesting here to quote about Chalcolithic burial furniture found at Nevasa. They contained bowls and spouted pots, beads of copper and carnelian stone. Even copper beaded necklace around the neck of a child was found.

A Comparative Study of the Antiquities from Mustang with Other Sites in the Sub-continent

The Pottery

Generally the handmade pottery found from the caves of Mustang have similarity in shapes and designs with the Neolithic, Chalcolithic and Megalithic pottery from many excavated Indian sites. The spouted pots, channel spouted or lipped basins and lipped bowls have been found from Brahmagiri, Nasik, Nevasa, Navadatoli (all in the Chalcolithic - copper - bronze pds.), T. Narasipur (Neolithic - Chalcolithic pd.), Chandoli, Daimadabad, Nagarjunkonda, Oriup (near Bhagalpur), Songaon (Neolithic - Chalcolithic pd.), Gilunda, Ahar, Sonepur, Pandu Rajardhipi (in Bengal), and at Inamgaon. At Khurdi (in Rajasthan) a copper channel spouted bowl had been excavated. These shapes are continued even in the P.G. ware - NBP sites like Banjarhi (5 Km.

south of Lumbini in Nepal[24]). They have been found from the Megalithic layers at Koldihawa (C14 date of which was 1440 ± 120 B.C.). Spouted vessels associated with burials had been found from Lothal, Rojdi, (Harappan pd.) Brahmagiri, Chandoli, Eran, Inamgaon, Jorwe, Nagarjunkonda, Nevasa, (in the Chalcolithic - copper - bronze pds.), Piklihal and Songaon (in the Neolithic - Chalcolithic pds). Mr. C. Margabandhu has rightly pointed out that ceremonial vessels were used in the burial and religious occasions. They are known from many sites in India[25]. Regarding the perforated pots found from the Mustang caves, it has to be noted that similar perforated pots had been found from Harappan sites, Neolithic and Chalcolithic period sites at several places in India.

The Use of Mud Bricks

In the caves of Mustang mud-bricks have been used as partition walls, support walls against the rock surface, for storage bins and for making hearths. Angela reports that they had been used from the earliest periods, but their use in successive periods had also been confirmed. The earliest site belonging to the Pre-Harappan phases like Kotdigi (in Sindha, Pakistan) and Kalibanga (in Srinagar dist., Rajasthan) have confirmed the use of mud-bricks. They had been largely used in all the Harappan sites of India and Pakistan. Both the Pre-Harappan and the Harappan period can be dated between 3000 B.C. to 1500 B.C. The first Neolithic site in India to use the mud-bricks is Gubkral near Srinagar, in Kashmir (in around 1500 B.C.). Manufacture of clay-bricks and rarely burnt bricks had been continued in the Chalcolithic - Bronze Age sites like Ahara, Nagada, Gilunda, Karoria and Koldihawa (in Allahabad). The date range of these sites is between 2650 to 1180 B.C. In the OCP culture they have been found at Lal Quila and Ambakheri (both in U.P. State). The use of mud-bricks houses at Hastinapur and Ahicchatra had been confirmed in the PG ware period (900 - 800 B.C.).

Grain Storage Bins And Ovens

From the Neolithic period man left the life of a wanderer, started living at a fixed place, cultivated and stored grains. Thus grains were kept in the pit silos (plastered with ochre), mud-brick storage bins and small quantities were preserved in the storage jars. During the Neolothic period pit silos treated with red ochre were excavated at Burzahom. At Inamgaon (a Chalcolithic site in the Pravara Godavari basin dated 1000 - 700 B.C.) pit silos were made. At Ahar and Gilund (Chalcolithic pd. 1800 - 1200 B.C.) we find the use of mud-brick storage bins (brick size - 40 x 22 x 7 cm, 33 x 13 x 10 cm) to store grains. Gilund had also white clay lined pits and ovens. In all the Harappan sites ovens had been discovered.

Use of Antler's Horn

The objects made of antler's horn had been found from (the first phase I) of Gubkral, Chirand (Saran, Bihar) in the Neolithic period.

Spindal Whorls And Sling Balls

Spindal whorls are circular objects with one or more holes in the centre. They are used as flying wheel in a spindle made of bamboo, wood or metal. They were used in twisting the threads. Different materials like terra-cotta, bone, shell, faience, stone, metal or wood had been used to make a wheel. Within the sub-continent they have been found from Harappan sites, from Burzahom and Chirand (in the Neolithic pd.), Inamgaon, Bagor, Ahar, Gilund (in the Chalcolithic pd.) and continued to be used even in the PG ware sites like Hastinapur and Alamgirpur. Outside this sub-continent they had been discovered from Ghassul and Megiddo in Palestine, Nagada in Egypt and Troy in Greece during 3000 - 2000 B.C.

The sling balls have been found from the Harappan sites, Mahagar, Chiranda (in the Neolithic pd.), Gilund, Nevasa, Brahmagiri (in the

Chalcolithic pd.), Lal Quila and Saipai (in the OCP culture).

Metal Objects

The metal objects found from Mustang caves are copper, bronze and iron. Let us now look into the earliest introduction of these metals in the earlier cultural periods in the South Asian region. Copper as well as bronze was introduced in the Neolithic period within a similar timeframe[26]. In the Harappan sites both copper and bronze antiquities had been discovered. Copper objects like arrowheads, bangles, rings, and pins were found from the last phase of Neolithic period at Gubkral (Kashmir). Limited number of copper objects were found from Kakoria (in UP). A very interesting picture has been presented by the site of Ganeshware (dist. Sikar, Rajasthan, in the OCP culture) where large number of copper tools with microliths had been excavated. This was the area which supplied ores for Harappan cities. From Khapa (a megalithic site dated 1000 B.C.) bronze, copper, and iron objects were discovered. Bronze objects were also found from Nilgiri and Raigir[27]. At Khurdi (a Chalcolithic site in Rajasthan) copper chisels, parasu like sheets and a channel spouted bowl had been excavated. In the sites of Malwa culture (between Chambal and Malwa) copper and low grade bronze objects like chisel, rings & bangles had been found.

Iron objects

Iron has been found in the Chalcolithic period of Chirand and Sonpur, at Hallur (in the Megalithic pd. 1000 B.C., Karnatak State) at Noh and Malwa (Central India, in the black and red pottery level, which is post Chalcolith but pre-NBP). Iron had been found from the PG ware sites. B. K. Thaper (p. 114) puts a time-frame of iron in the sub-continent as 1000 - 700 B.C.

Beads

Stone, faience, bronze, and steatite beads are found from the Harappan, Neolithic Chalcolithic, OCP and early Megalithic periods (between 3000 - 600 B.C.). It is true that some of these people or sites manufactured the beads in their home country but most of the beads (either in raw material or the finished products) must have come through trade links from far-off countries. In the caves of Mustang beads of agate, carnelian stone, shell, faience, glass, bronze and bone have been discovered and large portion of these materials had been transported through trade.

The Bronze And Copper Objects

It will be here appropriate to discuss about some bronze and copper objects (figs 9 and 10 of Angela's article in the present volume) recovered from the burial caves on the bank of Thak Khola which is located on the lowest altitude among the entire cave settlements. There are basically three bronze objects - (i) bronze or copper sheets looking like headless anthropomorphic figures, (ii) a bronze figure with four cross and a hole on the top center, and (iii) the copper bangles. The above objects or similar objects were not found from the upper settlement caves.

The Anthropomorphic Figures

The headless anthropomorphic figures have been called by Mr. Tiwari as chest protectors[28], a simple sheet by Angela[29], but the writer[30] saw some far-off relationship in them with the anthropomorphic figures discovered from the Ganga basin. There are different types of such figures, which must be related to some rituals or used as weapons. They are : (i) the Copper Anthropomorphic figures from Ganga basin. Till now altogether nine such pieces have been found from Bisauli, Fatehgarh, Sheorajpur, Sarthauli and Saipai (all in UP). (ii) The Parasu discovered from Sarthauli (dist. Saharnpur, UP), Khurdi (dist. Nagpur), Lothal (in Punjab) and Mitathal (110 Km. N. West of Delhi). The two earlier sites

belong to the Chalcolithic periods whereas the lower two sites are typical Harappan. (iii) The anthropomorphic figure which has been found about one and half years before and deposited in the DOA office, Kathmandu, come from Jagatpur village in Tikapur police post near Dhangarhi, in the Kailali district of the far-western Nepal Terai[31]. The figure was found while digging clay for making bricks. It has a projected head, two arms (which are not clubbed like the pieces in the first category but are short and slightly bent), and two (flaring out) legs. The piece was 36 cm (14", long, 10 cm to 28 cm (4" to 11") broad and weighs 3 kg. 800 gms[32]. (iv) The fourth type of copper (?) anthropomorphic figures or sheets have been found from the burial caves in Chokhopani (Mustang) which are located at 2700 m above sea level. These two figures are without pronounced semi-circular ridge or head, the hands and the legs are simply flanged out. The copper sheets are hammered and cut according to the size. It can be noticed that the hammer marks found over the body of Chokhopani figures fairly compare with the Ganga basin figures, illustrated by B. B. Lal[33]. The weight of the figures from Chokapani, each piece is 1 kg. 650 grams and are 38 cm longer. From the point of weight also the pieces seem to have some connections or influences from the copper tools found with the OCP cultural sites in the Ganga basin and can be placed between the Parsu and the Jagatpur figures.

Still, however, the metal analysis of the Jagatpur and the Chokhopani figures have not been done. Before we reach at any conclusion about the Chokhopani figures they have to be closely examined and studied. Whereas the Jagatpur anthropomorphic figure definitely belongs to the Ganga copper hoard culture and the area has to be explored thoroughly for further discoveries.

Another bronze figure found by Schuh[34], from a central burial cave of Thak Khola, is in the shape of a cross or also symbolising a human figure with two horns on the head and a hole. The figure might have been used as a digging equipment as the lower portion is looking like a spade, the two arms were to support two wooden poles which were tied by ropes inserting into the hole and pulled by one or two persons as plough. The chemical analysis of the figure shows that it contains 45 % copper, 30 % tin and 4.5 % zinc. Angela has rightly pointed out that the figure from the burial caves of Mustang can be compared from western regional sites than the Ganga basin. It is to be noted here that the copper alloyed with tin and some times with zinc have been found from Punjab, Baluchistan and Sindha area[35]. But simply on the metal differences of bronze tools Angela has tried to prove that the Mustang culture had no relationship with the Chalcolithic or the OCP culture. Whereas the writer has demonstrated above that bronze objects have been found from Harappan sites, in the Malwa culture, Megalithic site at Khapa, Ranchi and Leh. Apart from the bronze cross object and beads, Mustang caves have also copper rings or bangles. Enough facts and figures have been illustrated above to show that the antiquities from Chokhopani are comparable to the Neolithic, Chalcolithic and the Megalithic sites found in the south Asian region.

Assessment of the Complexes and Future Course of Action

Apart from the above facts we have to study and consider about some other examples of the sites in the region. The type of developed caves supported with rock cut and structural constructions, mud-brick storage bins displaying sufficient amount of grains they produced, and sophisticated antiquities with very small numbers of lithic tools, prove that the earliest or the first settlers of the Mustang caves belonged to some advanced stage or the last phase of Neolithic period. It might be a transitional phase where the Neolithic society was changing over to more advanced culture. Now we have to examine that the late Neolithic culture of Mustang stepped forward in a smooth and gradual way to the latter phases or leaped over the

Megalithic phase. We have seen that the Neolithic sites of Chechar, Chirand, Inamgaon and Koldihawa developed slowly into the Chalcolithic, Iron Age and Early historical periods. This development has been very rightly pointed out by Dr. H. D. Sankalia (1962, 155): "Chronologically the development of various regions (in the subcontinent) is very uneven (still it) began with Neolithic and passing through Chalcolithic or Bronze Age (it passed on) into Iron Age or Early Historical period".[36] There is another set of example from Gubkral (near Srinagar) which had Neolithic period followed by Megalithic and early historical period. Similarly, at Hallur there had been an overlap of different cultural phases like Neolithic, Chalcolithic and Megalithic periods.

Studies Still To Be Done

Angela Simons and her team of archaeologists have done the marvelous works of research in Mustang but there are works still to be done in the following areas.

(1) We have to study and classify the antiquities locally manufactured and imported from outside Mustang.

(2) The study of the correct stratigraphic position in selected caves where the layers are well preserved. We have to separate the antiquities of each layers and try to specify their cultural affinities.

(3) The study of pottery is still incomplete. We have to see that apart from handmade pottery in the earliest phases, when the slow wheel or fast wheel turned pottery had been introduced in the caves : we have to separate clearly the Neolithic, Chalcolithic or Megalithic and the Early Historical potteries.

(4) Metals found from the caves are Bronze, Copper and Iron. Specify the phases or periods of their introduction in the cave cultures. Metal analysis has to be done about Copper and Iron. Try to find out the mines (Bihar, Rajasthan, West Asia or local mines) from where the ores or the metal objects have been imported.

(5) Why the burial caves are found only in the lower regions of Thak Khola ? Please check whether they can be found further in the Muktinath or on the northern part of Mustang district.

(6) Excavate some of the caves in the Northern Mustang and extend the research works on the west and some where on the south of Purang, close to the Mansarovara lake. Try to find out the earliest settlement caves. This will give the idea about the direction of the entry of the earliest settlers.

(7) Period of introduction of Buddhism into the region should be specified. Whether the Himavanta Pradesh mentioned by Asokan edicts, Life legends and the early Buddhist Pali literature in Mansarovara and the Muktinath area. The Pali literatures repeatedly mention about the Anotaptadaha (Manasarovara)[37]. This means that Buddhism was introduced in the region in the early Christian era.

(8) Measurement and classification of the mud-bricks within the caves and their study with the comparative data will give the picture of the Age.

(9) Clear data about the period of introduction of wooden members into the caves have to be collected. Wooden members in architecture were introduced in the Harappan cities, in Pataliputra during the Mauryan period and in the Western Indian Caves in the 2nd cent.

B.C.

Conclusion

There are many research works still to be done in the area. The information about the earliest settlers of the caves, their area of migration and about their race has to be known. Though there are some helpful clues which have emerged after the research works have been done in the Mustang caves and the settlement sites. The earliest people who had reached the region were in the late Neolithic period and their bronze antiquities, pottery, manufacture of mud-bricks and similarity of burial sites indicate that they might have migrated from Kashmir (Srinagar - Leh) valley. It will be still proved if we can get the anatomical report about their race (check whether they are dolicocephalic people) and other features. At present it seems that the earliest settlers migrated from Kashmir to the Mansarovara Lake area, then moved slowly towards east and reached the Mustang district from where some families again moved to Sikkim[38], to Bhutan and also to Assam. It is here quite relevant to quote Dr. W. Haffner and Dr. Pohle (Ancient Nepal, No. 135, p.) that 'the extremely elevated high laying mountain valleys inhabited (now-a-days) by Tibetan ethnic groups (or a mixed race), the High Himalayas form a geographical unit that extends in the West as far as Laddakh and in the East as far as Bhutan." Similar study report has been produced by Robert Shafer[39] who says "we may reconstruct the migrations of the Aryans, ... the Dardic branch remained in north west India, the Daradas, Kashmiris and some Khasas (some having been left behind in the Himalayas of Nepal and Kumaon)".[19] According to the maps produced by Shafer it is clear that the Khasas lived at the upper course of the Sutlej near the Manasarovara lake in the times of Bharat War[40]. It will be still interesting to note here that the Asoka legend ascribes about his military actions against the Khasas (on the Western Nepalese territories) when he was a prince, shortly before the death of king Bindusar.

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1 Information obtained from a short note about the explorations done by the team of Angela Simons in August 1993, submitted to DOA.

2 D.N. Tiwari, *Cave Burials form Western Nepal, Mustang,* Ancient Nepal, No. 85, 1984-85, pp. 1-12.

3 Angela Simons, *Trail Excavation of a Cave System in Muktinath Valley,* Ancient Nepal, No. 130-133, 1992-1993, PP. 1-9; *Preliminary Report on the 1992 Campaign of the Team of the Institute of Prehistory, University of Cologne* (in the present volume).

4 Dr. D. Schuh, *Introduction,* Ancient Nepal, No. 130-133, pp. F-K

5 G. Tucci, *Journey to Mustang.* 1952, Kathmandu, 1953; Reprint 1977.

6 Harkha Gurung, *Maps of Nepal,* Bangkok, 1983.

7 D. N. Tiwari, Ancient Nepal, No. 85, pp. 6-8, Plates 1-8.

8 Prof. Hans. G. Huttel, Ancient Nepal, No.-135, pp. 1-17.

9 Dr. Angela Simons, Ancient Nepal, No. 136. (in the present vol.)

10 Dr. Angela Vouden Driesch, *Faunal Remains From Early House in Khinga,* Ancient Nepal, No. 134, pp. 18-22.

11 A. Ghosa, *Encyclopedia of Indian Archaeology,* 1990, pp. 6-7.

12 Dr. Predita Pohle, *Geographical Research on the Cultural Landscape of Southern Mustang,*

Ancient Nepal No. 134, pp. 57-81.

13 A Ghosa, *Encyclopedia........*, pp. 6-7.

14 Abdul Azizfarooq, *Prehistoric Civilization of Baluchistan,* The Archaeology, 1988, Karachi, vol-I, No.-1, p. 70.

15 A. Ghosa, *Encyclopedia*, 1990, P.3.

16 D.N. Tiwari, Ancient Nepal, No. 85, P. 6 & P. 9.

17 Dr. D. Schuh, Ancient Nepal, No. 130-33, P.K. & P.F.

18 Dr. A. Simons, Ancient Nepal No. 130-33, P. 8. In her recent article she has refuted the Chalcolithic relationship with the early settlers of Mustang Caves.

19 T.N. Mishra, *A Brief Survey of Nepalese Archaeological Activities and Antiquities*, Proceedings of Third/South Asian Archaeological Congress, Islamabad, 1988, Dept. of Archaeology and Museums, Govt. of Pakistan, P. 72; Ancient Nepal, No. 103, P. 6 and P. 4, footnote 7.

20 B.K. Thapar, *Recent Archaeological Discoveries In India*, UNESCO, 1985, PP. 43-44. Mr. Thapar has remarked that the pottery of Neolithic sites in Eastern India is 98% handmade and 2% wheel turned.

21 G. Corvinus, Ancient Nepal, No-86-88, pp. 4-5 and P-10; Corvinus, *"The Prehistory of Nepal from the Paleolithic to the Neolithic"*, A brief note submitted to DOA recently.

22 A. H. Fancke, *Antiquities of Indian Tibet,* New Imperial Series, ASI, 38, Calcutta-I, pp. 64-74; A. Ghosa, *Encyclopedia*, Vol - I. pp. 120, A. Ghosa, *Encyclopedia*, Vol - II.

23 A. Ghosa, *Encyclopedia*, Vol - I, p. 115.

24 Dr. S. B. Deo, *Archaeological Investigations in the Nepal Terai - 1964,* DOA, HMG, 1968, p.10, PL-IIIA. A Lipped basin of Crimson-slipped ware was found from Banjarhi.

25 A. Ghosa, *Encyclopedia*, Vol - I pp. 188-189.

26 A. Ghosa, *The City In Early Historical India*, Simla, 1973, pp. 2-3, Mr. Ghosa has said that 'the regional character of copper and bronze age cultures is - their mutual contacts .. and the practice of extra-regional trade, concentrating upon the import and export of metal'. He further adds that - 'trade started during the last phase of Neolithic period'. Similarly V. Gordon Child says that the results of the introduciton of bronze into the Neolithic society were followings - It gave effective means of production and transportation of technology of manufacturing tools, organised trade for the import of metal, formed a class of people who did not produce food and were engaged in metallic tool production, to feed those trading class, and to exchange metal objects (tool and ornaments) people started storing food.

27 B. K. Thaper, *Recent Arch. Discoveries*, UNESCO, 1985, pp. 110-111.

28 D. N. Tiwari, Ancient Nepal No. 85, pp. 1-12.

29 Angela Simons, *Preliminary Report on the 1992 Campaign,* (in the present volume).

30 T. N. Mishra, Ancient Nepal, No. 103, 6-15.

31 Photo - I.

32 The figure was kindly supplied by the police office of Tikapur on the 2049-1-1 . DOA expresses its heartful thanks to the police office Tikapur and Police Head Quarters, Kathmandu.

33 B. B. Lal, *Further Copper Hoards.....*, Ancient India, No. 7 Plates - V, VI, IX.

34 Angela Simons, in the present Vol, fig 9, No - 1.

35 Ghulam Mustaba, *Conservation of Metal Antiquities*. The Archaeology, 1988, Vol - I, p. 37. The

metal analysis given by the writer is (i) Bronze - having copper 84 % to 96% and tin 4% to 16% (ii) Brass - Copper 60% to 70% alloyed with zinc 40% to 30%.

B. B. Lal, *Further Copper Hoards from Gangetic Basin and Review of the Problem*, Ancient India, No - 7, p.37. The analysis of the metal given by Mr. Lal is following - Copper 98.77%, Nickel - 0.66% whereas some of the antiquities from the Harappan sites (they have both copper and bronze objects), Hissar, Anu (Persia) and Caucasia (South Russia) are bronze objects.

36 H. D. Sankalia, Prehistory And Protohistrory In India And Pakistan, Bombay, 1962, pp. 155.

37 Dr. Bharat Singh Upadhaya, *Buddha Kalina Bharatiya Bhugol*, 1961, Allahabad; Quoting Dipavamsa (3/10) and Mahavamsa (1/317) the writer refers about the six Buddhist monks who went to propagate Buddhism in the Himalayas during the period of Asoka. The leader of the team was Majjhim and other associating monks were Kassapgotta, Muladeva, Alakadeva, Sahadeva and Nandabhissara. The Milindapanho (1st cent. B.C.) mentions about the important rivers like - Ganga, Yamuna, Achiravati, Sarabhu, Sindhu, Sarasvati, Vettavati Vitansa and Chandrabhaga. The Commentary on Suttanipata refers about the seven lakes of the Himalaya mountains including Anotatta (Manasarovara).

38 During the recent technical meetings about the Mayadevi Temple Restoration the writer had been informed by Mr. Munish Chandra Joshi about the important early cultures excavated in Sikkim.

39 Robert Shafer, *Ethnography of Ancient India*, Wiesbadon, 1954, p. 43.

40 P.H.L. Eggermont, *The Year of Buddha's Mahaparinirvan*, The Dating of the Historical Buddha, Edited by H. Bechert, Vandenhoeck and Ruprect in Gottingen, Part - I, P. 24 ; P. 241 - "Two great warriors entered his service. They marched ahead of him, cutting a path through the mountains. Asoka was welcomed in the kingdom of the Khasas."

About the Authors

Mr. Khadga Man Shrestha	Director General, Department of Archaeology
Mr. Janak Lal Sharma	Ex-Act. Director General, Department of Archaeology
Mr. M. L. Karmacharya	Writer, Research Scholar
Dr. Niels Gutschow	Architect, Kathmandu, Nepal
Dr. A. Simons, Dr. W. Schon	Archaeologists, University of Cologne
Mr. S. S. Shrestha	Archaeologist, Department of Archaeology
Mr. C. P. Tripathee	Archaeologist, Department of Archaeology
Dr. C. Seeber	Scientific Assistant of Dr.R Graafen
Dr. C. Ramble	Assistant Co-researcher of Prof. Schuh, University of Bonn
Mr. T. N. Mishra	Chief Archaeologist, Department of Archaeology